

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

Trading Technologies International, Inc.,)	
)	
Plaintiff,)	Civil Action No. 05-4120
)	
v.)	
)	Judge Edmond E. Chang
GL Trade SA (n/k/a SunGard Financial Systems)	
(France) SAS), GL Trade Americas, Inc.,)	
SunGard Data Systems Inc., and SunGard)	Magistrate Sidney I. Schenkier
Investment Ventures LLC,)	
)	
Defendants.)	Consolidated With
)	
<hr style="border: 0.5px solid black;"/>		
Trading Technologies International, Inc.,)	
)	
Plaintiff,)	Civil Action No. 05-5164
)	
v.)	
)	Judge Edmond E. Chang
)	
FuturePath Trading, LLC,)	
)	Magistrate Sidney I. Schenkier
Defendants.)	
)	
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DEFENDANTS' OPENING MARKMAN BRIEF

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Defendants GL Trade Americas, Inc. (“GL” or “GL Trade”), SunGard Financial Systems (France) SAS, SunGard Data Systems, Inc., SunGard Investment Ventures, LLC, and FuturePath Trading LLC (collectively “Defendants”) hereby submit their opening brief in support of supplemental claim construction of U.S. Patent No. 6,766,304 (“the ’304 patent”) and U.S. Patent No. 6,772,132 (“the ’132 patent”) (together, “the patents-in-suit”). This Court in 2006, and then the Court of Appeals for the Federal Circuit (“CAFC”) in 2010 previously construed several claim terms found in the patents-in-suit, none of which are the subject of this brief. *See* Declaration of Lance A. Soderstrom (“Soderstrom Decl.”), Exs. 1 and 2.

I. INTRODUCTION

Fierce global competition in the field of electronic trading drives efficiency. Over at least the past thirty years, companies have engaged in extensive technological development and improvement of operating systems and software to facilitate trading of equities, derivatives, options, currency and bonds. These developments have also included improvements in risk management, international order routing, client and exchange connectivity, analytical charts, order management, post-trade management, and market data and content. These software products included, but are not limited to, Plaintiff Trading Technologies International, Inc.’s (“TT”) X_Trader and GL Trade’s GL WIN platforms with their dozens upon dozens of files/windows.

TT touts its purported inventions as providing a faster and more efficient method of trading using an allegedly new graphic display with a “static,” unmoving price axis, and a “dynamic” display of current bids and asks quantity indicators that “change positions” or “move” along a “common” “static” price axis as new market information is received from the exchanges. Defendants, however, contend that TT was not the first to develop the inventions claimed in the patents-in-suit in this highly competitive field. Indeed, over at least the prior three

decades, a number of exchanges and independent software vendors (“ISVs”), including Defendant GL Trade, had developed substantially similar, if not identical, visual displays and software trading tools.

II. PROCEDURAL BACKGROUND

TT originally filed a separate action against *eSpeed, Inc.* in 2004, and then in mid-2005 against Defendants (and others). *See* Docket Entry (“D.E.”) 1. The *eSpeed* action was assigned to Judge Moran, and TT’s other then-pending patent actions, including its actions against Defendants, were reassigned to Judge Moran for the limited purpose of dealing with common issues under Local Rule 40.4. Judge Moran also conducted a Markman Hearing in the *eSpeed* action, and presided over the *eSpeed* Trial. *See* D.E. 31.

The *eSpeed* suit proceeded to trial in September and October of 2007. In conjunction with the *eSpeed* action Judge Moran had, a year prior to trial, conducted a Markman Hearing in order to address certain of the claim terms in dispute between TT and *eSpeed*. Judge Moran issued a claim construction ruling on October 31, 2006 (“Judge Moran’s Order”). *See* Soderstrom Decl., Ex.1. TT subsequently filed a Motion for Clarification which resulted in a second opinion by Judge Moran on February 21, 2007. *See* Soderstrom Decl., Ex. 3.

After the *eSpeed* trial, the Federal Circuit reviewed *de novo* and affirmed certain of Judge Moran’s claim constructions (not all of the constructions were before the Federal Circuit on appeal). *Trading Techs. Int’l v. eSpeed, Inc.*, 595 F.3d 1340 (Fed. Cir. 2008). The Federal Circuit concurred with Judge Moran’s construction of the term “static”, and held that the “static display of prices cannot move without a manual re-centering command from the trader.” *Id.* at 1355. The Federal Circuit confirmed that “[u]nder the district court’s construction, the patents-in-suit *only cover software with a manual re-centering feature and without automatic re-centering.* . . .” *Id.* at 1353 (emphasis added).

III. FACTUAL BACKGROUND

A. Electronic Trading Systems and the Prior Art¹

Prior to the 1970's, exchanges in the U.S. and abroad operated as "open-outcry," or floor-based "pit trading" auction markets. Traders would gather in physical locations in a designated area on a trading floor where a particular commodity or asset was being traded, and communicate their "bids"² and "asks"³ until a counterparty agreed to a price, at which point the trade would be consummated. In other words, buyers and sellers met and negotiated.

In certain exchanges (e.g. the New York Stock Exchange), a "specialist" was designated, whose role was to maintain a fair and orderly market, as well as to maintain limit order books⁴. *See Soderstrom Decl., Exs. 4 and 5.* The job of the "specialist" was to make continuous markets, match buyers with sellers, keep investors informed, commit capital when needed, stand accountable for the market in his or her stocks and ensure the best possible execution for the customer. The specialist would use limit order books to record current limit orders (both bids and asks) submitted by traders or other members pending execution or further action by the issuers. In some cases, the order book was a loose-leaf notebook, in others the actual order tickets were time stamped and arranged by price. When the market reached the price of an existing limit order in the book, the specialist would offer it to the trading crowd in order of

¹ Defendants believe that the general background facts cited in the following six paragraphs are undisputed.

² A "bid" is an offer to purchase a particular quantity or a commodity at a particular price, and an "ask" is an offer to sell a particular quantity of a commodity at a particular price.

³ In more modern instances a computer records customer buy or sell orders and the number of shares and the conditions or prices at which the orders are to be executed.

⁴ A limit order is an order to buy or sell a commodity at a specific price or better. A buy limit order can only be executed at the limit price or lower, and a sell limit order can only be executed at the limit price or higher. A limit order is not guaranteed to execute, and can only be filled if the commodity's market price reaches the limit price. While limit orders do not guarantee execution, they help ensure that an investor does not pay more than a pre-determined price for a commodity.

priority on behalf of the client, or another order in the book, executing the order and earning the specialist a small fee. Alternatively, the specialist would himself be required to either buy or sell the commodity. *See* Allan H. Pessin & Joseph A. Ross, *The Complete Words of Wall Street* 666-667 (1991).

With the improvement in communications technology and advances in computer technology, the need for a physical location of a “trading pit” became far less important. Traders could transact trades from remote locations. Exchanges around the world from the financial centers of Paris, New York, Chicago, London, Zurich, Stockholm, Tokyo, Hong Kong and Sydney, along with ISVs, made significant investments in electronic trading systems, particularly during the 1980s and 1990s, as a means of increasing the capacity, efficiency, and reliability of trading systems and networks. *See* Michael Gorham & Nidhi Singh, *Electronic Exchanges, The Global Transformation from Pits to Bits* 29-32 (2009). These improved electronic trading systems and networks increased the liquidity of markets, the volatility of the markets, the volume of trading, and affected the speed at which transactions could be entered and executed, the speed of the calculation times of trading engines, and the speed of routing and connectivity to the exchanges. *Id* at pp. 12-14 and 295-296.

Generally, electronic trading systems consist of mainframe computers, namely, host computers (back-end), communications network systems connecting the trader to one or more exchanges, and trading terminals/computers (front-end) for clients. *See* Joint Appendix⁵ (“Joint App.”) Ex. 1, ‘132 Patent, Col. 1, ll. 23 – 36. The host computers include the matching engine, that is, the computer system at the exchange that pairs all buy and sell orders that are at the same

⁵ As required by Local Patent Rule 4.2, the parties have submitted a Joint Appendix including the patents in dispute and the prosecution history for each patent.

price based on the matching rules defined by the exchanges. After the transition from “open out-cry” to electronic trading systems, most front-end computer programs displayed the prices and quantities, and identified the commodity being traded in various formats. By 1996, the front-end displays moved to a graphical user interface (“GUI”). These GUI front end programs incorporated icons and pull down menus, and responded to an input device (such as a mouse or keyboard). Using specialized software, a person seeking to enter a trade entered his or her desired bid or ask quantity at the desired price at the trading computer. This information was communicated through the communications network to the host computer, which was also receiving orders from other traders. The host computer “matched” (i.e. served as a matching engine) a particular order as soon as a corresponding bid or ask was submitted subject to the rules of the exchange (e.g. first order at a price level is the first order matched). In this way, orders were entered and executed in a similar, but more rapid rate than in the “open-outcry” system. Still today, however, for various reasons, exchanges are not fully electronic. For example, the Chicago Mercantile Exchange (“CME”) still has “open out-cry” pits.

Historically, the conversion from “open out-cry” to electronic trading occurred first and predominantly in Asia, Europe, the U.S., and Australia. See Michael Gorham and Nidhi Singh, *Electronic Exchanges, The Global Transformation from Pits to Bits* 52-53, 67-71 (2009). Exchanges that had developed such software well prior to 1999 included the following exchanges: the Toronto Stock Exchange, the Swiss Exchange (SWX), the Deutsche Terminbörse (DTB), The Australian Stock Exchange, the Marché des Options Négociables de Paris (MONEP), the Paris Bourse, the Marché à Terme International de France (MATIF), the London International Financial Futures and Options Exchange (LIFFE), the Stockholm Options Market (OM), the Tokyo Stock Exchange (TSE), and the Tokyo International Financial Futures

Exchange (TIFFE). The U.S. was slower to convert, as the major exchanges were owned by their member-specialists, who initially perceived electronic trading as a threat to their livelihood. But, even here, electronic tools and systems were developed which included, but were not limited to, the NYSE (Displaybook), the Chicago Mercantile Exchange (“CME”) (Globex), the Chicago Board of Trade (Project A), the INTEX system and Credit Suisse First Boston (PrimeTrade). Electronic trading systems that were sold or offered for sale in the U.S. during that time frame also included software from GL Trade, RTS and TT itself. *See e.g.* Soderstrom Decl., Ex.6 at TTX00907783, TTX00907794, and TTX00907795. Similarly, a large number of U.S. patents were issued well prior to 1999 covering trading software applications with displays of order information, including, for example, U.S. Patent Nos. 5,297,031; 5,243,331; and 6,317,727. Soderstrom Decl., Exs. 7-9.

Most electronic trading systems used a variety of different software platforms with a multitude of applications each having separate display windows using various formats to display information on a trader’s screens. Traders could typically have numerous windows open simultaneously on a single computer monitor screen, and would also commonly have multiple computer monitors in use to trade various commodities on various exchanges world-wide:



Soderstrom Decl., Ex. 10 at G0124627.

B. GL Trade and Defendants' Accused Products

TT has accused GL Trade's QuickTrade, Mosaic/ClickTrade, Spreader, and Genie software, and FuturePath's PhotonTrader application (version 2) of infringement. *See* Soderstrom Decl., Ex.11 at pp. 1-2. The accused QuickTrade, Mosaic/ClickTrade, Spreader and Genie software operate in association with GL's platform, GL WIN. GL WIN is software with over 50 independent executable files that display financial data, financial news, and graphics, and that through certain files/windows can send and manage different types of buy and sell orders. QuickTrade, ClickTrade, Mosaic/Spreader, Genie software, and PhotonTrader, generate and display user interfaces for a trader to view, enter, and send orders electronically. The QuickTrade software and PhotonTrader (version 2) application are the only accused software

products that Defendants currently distribute.⁶ Mosaic, Spreader, Photon Trader (version 1), and Genie were discontinued years ago.

1. GL Trade's QuickTrade Software

In or about June 1998, a GL Trade developer began coding and developing a front-end trading software application as an additional file/window to be added to GL's front-end trading platform, GL WIN. *See* Soderstrom Decl., Ex.12 at pp. 17-18. This file/window, called *TradePad*, was first released in a late 1998 version of GL WIN, and enhanced versions of the file/window were included in later GL WIN versions through 2000. *See id.* This window displayed, as seen below, a vertical price column that was unmoving, and allowed the trader to buy or sell a commodity from this window by the click of a mouse:

⁶ FuturePath has had, broadly speaking, two generations of PhotonTrader. One was derived from GL's Mosaic software and then a later version was separately developed by FuturePath.

Although the second generation Photon Trader differs from QuickTrade, in the interest of brevity we discuss only QuickTrade in the next section of this brief to give the Court a general sense of at least one of the accused products. *Lava Trading, Inc. v. Sonic Trading Mgmt.*, 445 F. 3d, 348, (Fed. Cir. 2006) ("While a trial court [**4] should certainly not prejudge the ultimate infringement analysis by construing claims with an aim to include or exclude an accused product or process, knowledge of that product or process provides meaningful context for the first step of the infringement analysis, claim construction.")

GL TradePad : LiffeDummy (3...					
File Display 2					
Qty	Price	Stock	Price	Qty	
1		LFRI2930300000F	115.130	50	
User	Bid Qty	Price	Ask Qty	User	
		115.290			
		115.280			
		115.270			
		115.260			
		115.250			
		115.240			
		115.230			
		115.220			
		115.210			
		115.200			
		115.190			
		115.180			
		115.170			
		115.160			
		115.150			
		115.140			
		115.130	50		
		115.120			
		115.110			
		115.100			
		115.090			
		115.080	99		
		115.070			
		115.060			
		115.050			
		115.040			
		115.030			
		115.020			
		115.010			
	97	115.000			
		114.990			
		114.980			
		114.970			
		114.960			
		114.950			
		114.940			
		114.930			
		114.920			
		114.910			
		114.900			
		114.890			
		114.880			
		114.870			
		114.860			
		114.850			
		114.840			
		114.830			
		114.820			

Soderstrom Decl., Ex.13 at G0122924. Subsequently, GL Trade enhanced and modified its *TradePad* software while preserving its core functionality and software. This enhanced *TradePad* evolved into a product known as “QuickTrade.” See Soderstrom Decl., Ex.14 at p. 45, ll. 3-16. GL began offering QuickTrade years prior to the issuance of the patents-in-suit.

The QuickTrade window has a display with an upper “Orderbox” region and a lower “Instrument Lists” region as shown below:⁷

Orderbox

The screenshot shows the GL QuickTrade application window. The top section is the Orderbox, which includes buttons for 'Cancel Current List', 'Cancel All Lists', 'Filter', 'Buy', 'Sell', and 'Modify'. It also has input fields for Quantity, Price, Contract (BA1C:F09), and a Broker dropdown. The bottom section is the Instrument List, which displays a table of market data for BA1C:F09. The table has columns for Traded Volume, Bid Acc, Average Bid, Bid Qty, Bid Nb, PrepQty Bid, Own Bid, Price, Own Ask, PrepQty Ask, Ask Nb, Ask Qty, Average Ask, and Ask Acc. The current best bid is 81 and the best ask is 83.

Instrument List

Bid Quantity Price Ask Quantity

The Orderbox allows the trader to enter information directly in the relevant fields and submit it to the market for execution by pressing either the Buy or Sell button. Below the Orderbox is the “Instrument List” region which displays, among other things, bid and ask quantities and prices. There is a single price column vertically oriented, and a vertical “Ask” quantity column and a vertical “Bid” quantity column. The best “Ask” price and best “Bid” price with their corresponding quantities are displayed, as well as additional prices and quantities above and below the best Ask and best Bid. In addition, last traded price, quantity, and volume

⁷ This screen shot is the QuickTrade application from GL Win 5.9. Other versions of QuickTrade may somewhat vary in appearance from this version.

traded at a price are displayed. The price column will automatically re-center so that the best Ask price and quantity, and best Bid price and quantity remain visible in the middle of the grid display. Under certain limited conditions a trader may enter an order on the market directly from this instrument list with a click of the mouse at the selected price level.

2. TT's Infringement Allegations

TT is the owner by assignment of the patents-in-suit. *See* Joint App. Exs. 1 and 2. The applications for the '132 and '304 patents were filed by TT in 2000 and 2001 (and claim the benefit of the priority date of an earlier provisional application filed in March 2000 ("Provisional")).^{8, 9} *See id.* The applications were examined by the U.S. Patent and Trademark Office ("USPTO") from 2000 through 2004. Both patents were later subject to reexamination by the USPTO as a result of a substantial new question of patentability being raised based on certain prior art references not previously considered by the USPTO.¹⁰ The USPTO found that the art submitted by the requester did not render the claims of either patent invalid. *See* Joint App. Exs. 200 and 298.

TT contends that the purported invention of the '132 and '304 patents provides a faster and more efficient method of trading using an allegedly new graphic display.

⁸ Provisional applications are governed by 35 U.S.C. §111(b), which provides that a provisional application must have a specification (and drawings, if necessary to understand the invention), but unlike a non-provisional application, need not include any claims nor an oath by the applicant. Each claim of a later filed non-provisional application is only entitled to the benefit of the earlier priority date of the provisional if the disclosure in the provisional meets the requirements of 35 U.S.C. §112, ¶1.

⁹ The '304 patent is a divisional of the '132 patent, and the specifications are identical for all relevant purposes. A divisional application is a second application for an independent and distinct invention, carved out of the parent application during its lifetime and disclosing and claiming only subject matter disclosed in the parent application. A divisional application is appropriate when the parent application claimed more than one invention. The divisional application is often filed as a result of a restriction requirement made by the USPTO examiner. *See* 35 U.S.C. §121.

¹⁰ Reexamination provides a means whereby any member of the public may ascertain whether a substantial new question of patentability can be raised against an issued patent on the basis of documentary prior art – patents and printed publications.

FIG. 3

SYCOM FGBL DEC99				BidQ	AskQ	Prc	LTQ
E/W	10:48:44						
L	3			104	99		
R	5			24	98		
	720			33	97		
X	10			115	96		
	0						
	10 1H			32	95		
	50 3H			27	94		
S 0 W 24	1K 5H			63	93		
S 0 W 7	CLR			45	92		
X	10			28	91		
	17			20	90	10	
B 0 W 15	CXL		18		89		
B 0 W 13	+ -		97		88		
	NET 0		30		87		
B 0 W 17	NET REAL		43		86		
			110		85		
			23		84		
			31		83		
			125		82		
			21		81		

Joint App. Ex. 2, Figure 3. This display can appear on the trading screen among a number of other possible windows. According to the patents-in-suit, the TT invention displays “market depth on a vertical or horizontal plane which fluctuates logically up or down, left or right, across the plane as the market prices fluctuates.” Joint App. Ex. 1 at Col. 3, ll. 7-10. The display also includes a *static* display of prices aligned with one or more bid and ask quantity value(s).

Claim 1 of the '132 patent states as follows:

1. A method of placing a trade order for a commodity on an electronic exchange having an inside market with a highest bid price and a lowest ask price, using a graphical user interface and a user input device, said method comprising:

setting a preset parameter for the trade order

displaying market depth of the commodity, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including at least a portion of the bid and ask quantities of the commodity, the dynamic display being aligned with a static display of prices corresponding thereto, wherein the static display of prices does not move in response to a change in the inside market;

displaying an order entry region aligned with the static display prices comprising a plurality of areas for receiving commands from the user input devices to send trade orders, each area corresponding to a price of the static display of prices; and

selecting a particular area in the order entry region through single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.

Joint. App. Ex. 1, Col. 12, ll. 2-27.

Claim 1 of the '304 patent states as follows:

1. A method for displaying market information relating to and facilitating trading of a commodity being traded in an electronic exchange having an inside market with a highest bid price and a lowest ask price on a graphical user interface, the method comprising:

dynamically displaying a first indicator in one of a plurality of locations in a bid display region, each location in the bid display region corresponding to a price level along a common static price axis, the first indicator representing quantity associated with at least one order to buy the commodity at the highest bid price currently available in the market;

dynamically displaying a second indicator in one of a plurality of locations in an ask display region, each location in the ask display region corresponding to a price level along the common static price axis, the second indicator representing quantity associated with at least one order to sell the commodity at the lowest ask price currently available in the market;

displaying the bid and ask display regions in relation to fixed price levels positioned along the common static price axis such that when the inside market changes, the price levels along the common static price axis do not move and at least one of the first and second indicators moves in the bid or ask display regions relative to the common static price axis;

displaying an order entry region comprising a plurality of locations for receiving commands to send trade orders, each location corresponding to a price level along the common static price axis; and

in response to a selection of a particular location of the order entry region by a single action of a user input device, setting a plurality of parameter for a trade order relating to the commodity and sending the trade order to the electronic exchange.

Joint App. Ex. 2 at Col. 12, l. 36 to Col. 13, l. 3.

In the *eSpeed* case the Court construed a number of terms from these claims, including, the terms “common static price axis” and “static display of prices.” Judge Moran construed these terms as “a line comprising price levels that *do not change positions* unless a manual re-centering command is received and where the line of prices corresponds to at least one bid value and one ask value,” and “a display of prices comprising price levels that do not change positions unless a manual re-centering command is received,” respectively. Soderstrom Decl., Ex.1 at p. 6. These constructions were subsequently affirmed by the Federal Circuit, and the parties do not challenge these constructions. *Trading Techs. Int’l v. eSpeed, Inc.*, 595 F.3d 1340 (Fed. Cir. 2008). The price axis of TT’s invention claimed in the patents-in-suit does not move (i.e., is “static”) unless manually re-centered, and the bid and ask quantities “change positions” or “move” along the price axis as the market changes.

IV. LEGAL STANDARDS

A. The Patent and Its Claims

A patent includes two basic parts: a written description of the invention, which is referred to as the “specification” of the patent and the patent claims. ABA, Section of Litigation, *Model Jury Instructions*, (2005 ed.) at 8.

The “specification” typically contains a one-paragraph “Abstract” describing the invention, drawings depicting the invention, a recitation of the “Background of the Invention,” a

“Summary of the Invention,” and a section providing a “Description of the Preferred Embodiment.”

The claims of the patent are numbered paragraphs at the end of the patent that define the scope of the patent owner’s rights under the law (i.e., what the patent owner may exclude others from making, using, selling, offering to sell, and/or importing during the term of the patent). The claims of a patent define the boundaries of the invention and provide notice to the public of those boundaries. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (“It is a bedrock principle of patent law that the claims of a patent define the invention to the patentee is entitled the right to exclude.”) (quotation omitted); *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576 (Fed. Cir. 1996) (“we look to the words of the claims themselves . . . to define the scope of the patented invention”). Thus, when a product or method is accused of infringing a patent, it is the patent claims that must be compared to the accused device or method to determine whether or not there is infringement. *Catalina Marketing Int’l, Inc. v. CoolSavings.com, Inc.*, 289 F.3d 801, 812 (Fed. Cir. 2002).

The text of a patent claim lists in separate paragraphs the elements of the claimed invention, also referred to as “limitations” because they define the technical boundaries of the invention. All claims should be construed so as to be consistent with the specification of which they are a part. *Playtex Prods., Inc. v. Procter & Gamble Co.*, 400 F.3d 901, 906 (Fed. Cir. 2005).

Some patent claim limitations, instead of reciting an element in detail, may be written as means-plus-function limitations subject to 35 U.S.C. § 112 ¶ 6. Such limitations recite the function that the element performs, but do not identify the structure (or “means”) that performs that function. The structure instead must be found in the specification. Such limitations usually

include the phrase “means for” or similar language, but need not do so in every instance. A limitation can be a means-plus-function limitation even if it does not use the word “means” if the limitation does not on its face recite sufficient structure for performing the specified function. *See Cole v. Kimberly-Clark Corp.*, 102 F. 3d 524, 531 (Fed. Cir. 1996) (“merely because an element does not include the words ‘means’ does not automatically prevent that element from being construed as a means-plus-function element”).) When a claim limitation is written in mean-plus-function format, it covers the structures described in the patent specification for performing the functions stated in the claim, as well as any structure that is equivalent to the described structures. *WMS Gaming, Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1347 (Fed. Cir. 1999).

B. The Law of Claim Construction

Claim construction is as a matter of law exclusively within the province of the Court. *Markman v. Westview Inst., Inc.*, 517 U.S. 370, 372 (1996). In *Phillips v. AWH Corp.*, the Federal Circuit provided direction on claim interpretation. In interpreting claims, the claim terms are typically given the meaning that the term would have to a person of ordinary skill in the art at the time of the invention, *i.e.*, their ordinary and customary meaning, unless otherwise defined or used differently by the inventor as it appears from the patent specification and file history. *Phillips*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005). Importantly, the person of ordinary skill is deemed to read the claim term in the context of the entire patent, including the specification and file history. *Id.*

C. The Intrinsic Record

In *Phillips*, the Federal Circuit made clear that in performing claim construction, the Court should look first to the intrinsic evidence of the patent. *Id.* The specification, file history and cited references are collectively referred to as “intrinsic evidence” or the “intrinsic record.”

Indeed, the specification “is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” *Phillips*, 415 F.3d at 1316 (quoting *Vitronics*, 90 F.3d at 1582). In addition to looking to the patent’s specification, courts “should also consider the patent’s prosecution history...” *Phillips*, 415 F.3d at 1317. (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995), *aff’d*, 517 U.S. 370 (1996)). The prosecution history contains the complete record of all the proceedings before the PTO. *Id.* It is pertinent to claim construction because “[l]ike the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent,” and was “created by the patentee in attempting to explain and obtain the patent.” *Phillips*, 415 F.3d at 1317. Indeed, “the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Id.* (citing *Vitronics*, 90 F.3d at 1582-83).

Further, if during prosecution, the “patentee makes clear and unmistakable prosecution arguments limiting the meaning of a claim term,” that term cannot include the claim matter that was disavowed during prosecution: “[W]here the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim congruent with the scope of the surrender.” In fact, the Federal Circuit has repeatedly stated that “[t]he doctrine of prosecution disclaimer [precludes]...patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution.” *Scandisk Corp. v. Memorex Products, Inc.*, 415 F.3d 1278, 1286 (Fed. Cir. 2005) (citing *Omega Eng’g. Inc. v. Rayteck Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003)) (citations omitted).

With respect to technical terms, reliance on the intrinsic record is especially appropriate. The Federal Circuit has consistently reaffirmed that the “best source for understanding a technical term is the specification from which it arose, informed, as needed, by the prosecution history.” *Phillips*, 415 F.3d at 1315 (citations omitted).

D. The Extrinsic Record

Evidence external to the patent and the file history may be used for the Court’s understanding of the patent. However, this evidence is not for the purpose of varying or contradicting the terms of the claims. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996). This external evidence is known as “extrinsic evidence.”

Extrinsic evidence consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, learned treatises, and other patents. *Phillips*, 415 F.3d at 1317 (citing *Markman*, 52 F.3d at 980). Extrinsic evidence such as dictionaries and treatises may help the Court to understand the underlying technology, or may assist the Court in determining the accepted meaning of a term to those of skill in the art of the invention. *Id.* at 1318. Further, extrinsic evidence such as expert testimony may be useful in providing a background of the technology at issue, to explain how an invention works, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field. *Phillips*, 415 F.3d at 1318

In fact, “because extrinsic evidence can help educate the court regarding the field of the invention and *can help the court determine what a person of ordinary skill in the art would understand terms to mean*, it is permissible for the district court in its sound discretion to admit and use such evidence. In exercising that discretion, and in weighing all the evidence bearing on claim construction, the court should keep in mind the flaws inherent in each type of evidence and assess that evidence accordingly.” *Id.* (emphasis added).

As explained above, the claims are properly construed from the perspective of a person of ordinary skill in the art. With respect to the patents-in-suit, Defendants define the person of ordinary skill in the art as a person who:

has a minimum of two years experience in high volume enterprise transactional systems, including design and operation of electronic trading systems, computer programming, graphical user interfaces, client server architectures and networking, or input from a person with such knowledge and experience and at least a bachelor's degree or equivalent knowledge in trading.

E. The Prosecution Histories of the '132 and '304 Patents

1. The '132 Patent's Prosecution History

The applicants filed the application that subsequently issued as the '132 patent on June 9, 2000, and claimed priority to an earlier Provisional application dated March 2, 2000. Joint App. Ex. 3. On August 21, 2000, the applicants filed a Petition to Make Special (Joint App. Ex. 18), which is a request that the application be granted special status and be examined by the USPTO at an accelerated pace. With this, the applicant is required to conduct a search of prior technology the applicant deems most closely related to the subject matter encompassed by the claims and provide to the Patent Examiner copies of this art, along with a detailed discussion of why the claimed invention is patentable over the references identified in the petition. *See* Soderstrom Decl., Ex.15. The applicants represented to the USPTO that they did this. *See* Joint App. Ex. 18.

From the outset, applicants represented to the USPTO that their invention “is directed to a graphical user interface for displaying market depth of a commodity traded in a market, including a dynamic display for a plurality of bids and for a plurality of asks in the market for the commodity and a static display of prices corresponding to the plurality of bids and asks.” Joint App. Ex. 18 at JA 000139. Simply stated, the applicants claimed that the alleged inventions combine a static price display and a dynamic display of bids and asks. Moreover, the Petition to

Make Special distinguished the claimed inventions from the references the applicants identified, stating that the references had no disclosure “that the listings of bids and asks actually move along any axis,” and “[t]here being no static display of prices, the references also do not disclose that the pluralities of bids and asks are dynamically displayed in alignment with the prices corresponding thereto.” *See* Joint App. Ex. 18 at JA 000142.

The Petition to Make Special was eventually granted after an initial denial on April 27, 2001. Joint App. Ex. 26. In a subsequent Office Action dated June 8, 2001, the Examiner found that the applicants’ claims, as drafted, were directed to two separate inventions: claims 1-21 to a graphical user interface invention, and claims 22–40 to a method, computer readable medium and client server system for placing a trade order. *See id.* at JA 000176. The applicants chose to continue prosecution of the invention in claims 22-40 (as conveyed to the Examiner during a telephone call with the applicants’ counsel), and original claims 1 - 21 were canceled. *Id.* at JA 000176. The Examiner then rejected claims 22–40, namely, the remaining pending claims, as being indefinite under 35 U.S.C. § 112, and as obvious or anticipated by TT’s own prior art, the X_trader system that taught “single click trading” and displaying “market depth.” *Id.* at JA 000178-180.

On October 9, 2001, the applicants filed a response to the June 8th Office Action with an accompanying amendment. Joint App. Exs. 32-35. Applicants stated that original claims 1–21 were cancelled, amended four of the original (still pending) claims, and added 48 new claims (claims 41-88). *See* Joint App. Exs. 33 and 34. In distinguishing the anticipatory reference, applicants stated that, *inter alia*, the prior art “does not provide a static display of a plurality of prices for the commodity in at least one direction in numerical order and does not provide a bid display region and an ask display region substantially adjacent to said display of prices, wherein

a bid or an ask in the market for the commodity may be displayed dynamically and in alignment with a price corresponding thereto.” Joint App. Ex. 35 at JA 000201. Applicants also stated that the prior art “did not contain a dynamic display of bids or asks in alignment with a static display of prices corresponding thereto.” *Id.* at JA 000198.

The Examiner, after many communications with the applicants’ counsel, a large number of which were originally not of record in the file history, allowed the application.¹¹ *See, e.g.*, Joint App. Ex. 104 at JA 000682. In the July 31, 2002, Notice of Allowance, the Examiner stated:

the prior art fails to teach a method of placing a trade order, computer readable medium with instructions for placing a trade order, and/or a client system for placing a trade order comprising a dynamic display and a static display. **The static display, directed to the commodity price, does not change.** In contrast, the **values of the bid/ask, reflecting the market depth** for the commodity, **are dynamically displayed and are aligned with the corresponding static price values.** These features in combination with the claim features of claims 22, 29 and/or 35 render the claims allowable.

Joint App. Ex. 42 at JA 000240 (emphasis added). Thus, in both the applicants’ and the Examiner’s views, the ’132 patent was patentable over the prior art because it allegedly

¹¹ Defendants learned during discovery that the publicly available prosecution histories of the patents-in-suit are materially incomplete. It is apparent from documents produced by TT, that a number of communications between the applicants and the U.S. Patent and Trademark Office (“USPTO”) are omitted from the prosecution histories of both patents-in-suit, including, for example, Interview Summaries and direct written communications with the USPTO Examiner. As a result, the complete prosecution histories of the patents-in suit are currently unavailable to the Court and to the defendants for this Markman proceeding. On May 2, 2006, Defendants filed in the USPTO a Petition to Reconstruct the Official Files (“Petition to Reconstruct”) of both patents-in-suit. Joint App. Ex. 104. As noted in the Petition to Reconstruct, the procedures of the USPTO were clearly abused and were not followed during the prosecution of the patents-in-suit. *See id.* Specifically, numerous written communications between the applicants’ counsel and the USPTO Examiner were not incorporated into the prosecution histories as required by the Manual of Patent Examining Procedure, § 713.04. Given that material portions of the intrinsic record are missing, Defendants’ proposed constructions, and those of any other party in this action, are based on an incomplete and possibly inaccurate record.

possessed the combination of a dynamic display of bid/ask values that are aligned with the corresponding “static” price values in a static display that “does not change.”

Subsequently, on November 12, 2002, applicants submitted a Request for Continued Examination under 37 C.F.R. § 1.114 (“RCE”) seeking consideration of some previously undisclosed prior art references. Joint App. Ex. 59. At the same time they also submitted a Petition from Withdrawal of Application from Issue under 37 C.F.R. § 1.313(c)(2), and the petition was granted on November 13, 2002. Joint App. Ex. 62. Applicants also submitted another RCE in March 2003, seeking to keep the prosecution of this application open without having the allowed claims issued. *See* Joint App. Ex. 71.

These multiple RCEs and the Petition for Withdrawal, which typically slow down the prosecution were made despite the fact that applicants had originally petitioned for accelerated examination. During the time that applicants purposely slowed the examination TT was able to observe what its competitors, including Defendants GL Trade, were innovating in the marketplace.

During the continued examination, applicants submitted a supplemental amendment on March 21, 2003. Joint App. Ex. 72. This filing amended claims 22, 23, 29, 30, and 35-40 (corresponding to claims 1, 2, 8, 9, and 14-19 of the issued patent claims), and added claims 89-95 (corresponding to claims 50-56 in the issued patent). *See* Joint App. Ex. 73. Applicants made significant changes to the patent claims in this amendment, which, as noted, was filed after applicants had purposely slowed the examination. This is the first time that some of the ‘132 patent claim terms here at issue appeared, including “setting a preset parameter for the trade order,” “inside market,” and “exchange order book” (which is found only in claims 53-55, introduced for the first time in this amendment). *See id.*

A Notice of Allowability was mailed on February 10, 2004, allowing all the then-pending claims. Joint App. Ex. 82. The Examiner again made a statement of reasons for allowance, namely, that: “[t]he primary reason for allowance is the limitation directed to the ‘dynamic display’ of a plurality of the quantity of bids and asks aligned with a ‘static display’ of corresponding prices. Here unlike the prior art, **the ‘static’ display of prices is just that, static, and does not move** in response to a change in the inside market.” Joint App. Ex. 82 (emphasis added). The ’132 patent issued on August 3, 2004.

2. The ’304 Patent’s Prosecution History

The history of the ’304 patent filing is similar to that of the ’132 patent, in that applicants made significant claim amendments, remarks, and statements. Under the doctrine of prosecution history estoppel, these amendments represent important limitations upon the scope of the claims.¹² *See Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 344 F.3d 1359, 1366 (Fed. Cir. 2003); *Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 33 (1997).

In response to the restriction requirement issued during prosecution of the application that resulted in the ’132 patent discussed above, on June 27, 2001, applicants filed a divisional application with a preliminary amendment that deleted claims 22-40 (the claims pending in the ’132 patent application) leaving claims 1-21 pending. *See* Joint App. Exs. 205 and 207. Applicants also filed a Petition to Make Special in the ’304 prosecution, a little more than a year after filing the similar petition in the ’132 prosecution. Joint App. Ex. 211. In the ’304 petition, applicants stated that an accelerated prosecution was necessary because there were infringing

¹² Under the doctrine of prosecution history estoppel, a patent owner is estopped from invoking the doctrine of equivalents to recapture subject matter that was surrendered by argument or amendment during the prosecution of the patent, if the amendments are made as a matter of patentability.

devices or products on the market or infringing methods in use, and that “applicant has made a rigid comparison of the infringing device, product or method . . . and that, in its opinion, some of the claims are unquestionably infringed.” Joint *Id.* at JA 002560-2561. Applicant did not identify the allegedly infringing devices or products. TT, however, was obviously prosecuting the patents-in-suit with an eye towards its competitors, and the now accused products, some versions of which were on the market or introduced during the prosecution period.

Subsequently, in an amendment dated September 26, 2002, applicants cancelled all pending original claims 1 – 21 and added new claims 41-68. Joint App. Ex. 214. These new claims introduced for the first time phrases such as “common static price axis,” “first and second indicators,” and “when the inside market changes.” In the September 26, 2002, Amendment, the applicant referenced an interview and continued telephone conversation with the Examiner in which the Examiner is said to have agreed that the newly added claims would be allowed.¹³ *Id.* at JA 002574.

Following this and applicants’ subsequent filing of three Information Disclosure Statements (“IDS”) listing prior art references, the applicants, as they did with the ’132 application, filed a Request for Continued Examination (“RCE”) under 37 C.F.R. § 1.114 on March 10, 2003, allegedly in order to ensure full consideration of all the references listed in the three IDS’s filed on November 14, 2002, December 18, 2002, and February 11, 2003. Joint App. Ex. 216.

¹³ Defendants note that there is no Interview Summary of this alleged telephone interview in the prosecution history, in violation of MPEP § 713.04 (“A complete written statement as to the substance of any face-to-face, video-conference, electronic mail or telephone interview with regards to the merits of an application must be made of record in the application, whether or not an agreement with the examiner was reached at the interview.”).

The applicants also filed, on March 21, 2003, an amendment in which claims 41-44, 48-50, 52-54, 56, 61, 62 and 68 were amended. Joint App. Ex. 226. In this same amendment, the applicants cancelled claim 55 and added claims 69-81. *Id.* Subsequently, on November 12, 2003, applicants submitted yet another IDS with a few additional prior art references.

On February 10, 2004, a Notice of Allowance was issued. Joint App. Ex. 218. In this Notice of Allowance, the Examiner again stated, as in the '132 patent file history, that:

[t]he primary reason for allowance is the limitation directed to the “dynamic display” of a plurality of the quantity of bids and asks aligned with a ‘static display’ of corresponding prices. Here, unlike the prior art, the “static” display of prices is just that, static, and does not move in response to a change in the inside market. With this display of market depth, claimed in each of the independent claims, a trader places a trade order with the pointer in the area of the order entry region of the dynamic market depth region, through a single computer implemented action...

Id. at JA 002592.

The '304 patent issued on July 20, 2004.

3. The Re-Examination of the Patents-in-Suit

On April 6, 2007, a requester filed an *ex parte* request for a re-examination of the '132 patent, citing certain prior art that had not been previously considered by the PTO.¹⁴ Joint App. Ex. 129 at JA 001465. The re-exam was assigned Control No. 90/008,576. *Id.* The date of filing was vacated because of a failure to comply with the requirements set forth in 37 CFR 1.510, *Id.*, but the requester remedied the defects, Joint App. Ex. 130, and on August 1, 2007, the Examiner granted the request for re-examination finding that “[a] substantial new question of patentability affecting claims 1-56 of United States Patent Number 6,722,132 is raised by the request for *ex parte* reexamination.” Joint App. Ex. 135 at JA 001666.

¹⁴ An *ex parte* reexam is one in which the requester files the original request, which includes the cited prior art and a statement of reasons why the requester believes the art to be relevant, but thereafter the re-exam proceeds between the examiner and the patentee without any further participation by the requester.

Specifically, the Examiner found that two of the references cited by the requester, consisting of certain materials relating to the Tokyo Stock Exchange ("TSE (Orientation) A") and certain operation procedures relating to the Tokyo Stock Exchange ("TSE (Operation) B") contained "teachings to similar method steps or apparatus to the claim limitations (e.g., a dynamic display of bids and asks aligned with a display of prices and order entry region) cited to in the reasons for allowance in application number 09/590,693 that issued as the 6,72,132 patent." *Id.* at JA 001670-671. The Examiner also found that the other two references cited by the requester, a certain patent issued to Friesen and another patent assigned to Amazon likewise contained teachings similar to that found in the '132 patent. *Id.* at JA 001672-73.

After the re-examination proceedings were opened, an interview took place between the Examiner and the patentee's attorney on October 24, 2007, and a summary of this interview was subsequently filed. Joint App. Ex. 138 at JA 001682-683. The summary indicates that the patentee's attorney wished to file a large volume of papers consisting of approximately ten (10) evidence boxes, *Id.* at JA 001683, but the Examiner informed the patentee that large submissions were discouraged. *Id.* A further Interview Summary relating to the same topic was filed on November 26, 2007, in which the patentee's attorney declined to explain the relevance of the materials being submitted. Joint App. Ex. 152 at JA 001935-136.

Thereafter, the Examiner issued a Notice of Intent to Issue *Ex Parte* Reexamination Certificate. In the Notice, he stated that the TSE (Orientation) A and the TSE (Operation) B references, although raising "a substantial new question of patentability," were distinguishable because under certain circumstances they permitted the display of prices to automatically update so as to keep the center price in the middle of the screen, and that this teaching was directly counter to the static display required by the '132 patent. Joint App. Ex. 158 at JA 001990

(emphasis added). The Examiner similarly found that "Amazon and Friesen also do not teach such claim limitations nor render the claims obvious." *Id.* at JA 001991.

On the same date that the requester filed a request for re-examination with respect to the '132 patent, he also filed a request for re-examination of the '304 patent, which was assigned Control No. 90/008,577. Joint App. Ex. 244 at JA 002953. The request for re-examination cited the same references as were cited in the '132 request for re-examination, Joint App. Ex. 245, and the re-examination thereafter proceeded through the same stages as the '132 reexamination request. For example, there were again two Interview Summaries relating to the volume of documents which patentee desired to file. Joint App. Exs. 253 and 264.

On March 4, 2008, the Examiner mailed a notice indicating that she had not considered at all about 60% of the papers the patentee's attorney had submitted. Joint App. Ex. 171. The Examiner further noted that the papers she had considered were in the limited sense set forth in the MPEP section 609.05(b). Joint App. Ex. 170 at JA 002271.

On April 28, 2008, the patentee petitioned the USPTO to consider all of the papers it had submitted. Joint App. Ex. 178. On June 23, 2008, the USPTO granted the patentee's petition and stated that each paper the patentee submitted would be given a limited consideration. Joint App. Ex. 197 at JA 002451. The re-examination ultimately terminated in a Notice of Intent to Issue *Ex Parte* Reexamination Certificate, which contained the same language as the Notice of Intent that issued with respect to the '132 patent. Joint App. Ex. 267.

F. The Terms in Dispute

Despite Judge Moran's prior claim construction rulings, there currently remain some terms that are at issue and that this Court has not construed within the '132 and '304 patents' claims. The parties have met and conferred regarding these remaining terms. Defendants set

forth below these terms, their proposed definitions, and, as currently understood by them, TT's proposed definitions:¹⁵

Term	TT Definition	Defendants' Definition
"market depth" (See e.g. Claim 1 of the '132 patent)	ordinary meaning	<i>Current bid and ask prices and quantities in the market away from the inside market.</i>
"when the inside market changes" (See e.g. Claim 1 of the '304 patent) "a change in the inside market" (See e.g. Claim 1 of '132 patent)	At the time that new data reflecting a change in the inside market is received.	<i>At the time that new data reflecting a change in one or more of the best bid price, best bid quantity, best ask price, and best ask quantity is received by the trader's computer.</i>
"a display device for displaying" (See e.g. Claim 14 of the '132 patent)	ordinary meaning	<i>A terminal screen or device for displaying graphics.</i>
"setting a preset parameter for the trade order" (See e.g. Claim 1 of the '304 patent)	ordinary meaning	<i>The trader setting a parameter for a future trade order.</i>

¹⁵ Regardless of the parties' proposed constructions for the claim terms, the Court can construe and apply its own meaning (e.g. herein "market depth"). See, e.g., *Seven Networks Inc. v. Visto Corp.*, 05-cv- 365, 2006 WL 3840109 at *7 (E.D. Tx. Dec. 29, 2006) (rejecting both parties proposed definitions for the term "Non-persistent connection" and adopting the Court's own definition); *Cnx Gas Corp. v. Cdx Gas, LLC*, 05-cv-1574, 2006 WL 6251564 at *14 (W.D. Pa. Aug. 30, 2006) (rejecting both parties proposed constructions and applying the Court's own meaning for the term "the articulated well bore is substantially vertical"; *Ultratech Stepper, Inc. v. ASM Lithography, Inc.*, 97 Fed. Appx. 914, 921, 2004 WL 842839 at *7 (Fed. Cir. 2004) (rejecting both parties proposed constructions for the term "microcircuit device" and applying its own construction).

Term	TT Definition	Defendants' Definition
<p>“through single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.”</p> <p>(See e.g. Claim 1 of the '132 patent)</p>	ordinary meaning	<p><i>The trader by a single action of a user input device with a pointer of the user input device positioned over a particular area sets additional parameters and sends a trade order through a terminal to the electronic exchange.</i></p>
<p>“a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange.”</p> <p>(See e.g. Claim 1 of the '304 patent)</p>	ordinary meaning	<p><i>The trader by a single action of a user input device sets additional parameters and sends a trade order through a terminal to an electronic exchange.</i></p>
<p>“exchange order book”</p> <p>(See e.g. Claim 33 of the '132 patent)</p>	The bid and ask prices and respective quantities for a specified commodity maintained by an exchange	<p><i>The bid and ask prices and respective quantities maintained by an exchange for all traded commodities.</i></p>
<p>Program code</p> <p>(See e.g. Claim 8 of the '132 patent)</p>	Not a means-plus-function limitation	<p><i>A means-plus-function limitation governed by 35 U.S.C. § 112, ¶ 6.</i></p>

Defendants also point out that they no longer seek to add language to the definitions as used in the '132 and '304 patents previously entered by Judge Moran in the *eSpeed* matter for the terms “dynamic display” and “dynamically displaying,” namely, “[a] display of a plurality of bids and asks that are updated in response to new market information such that the bids and asks

change positions relative to the static display of prices when the market changes,” and “[u]pdating the first (second) indicator in response to new market information such that the first (second) indicator changes positions relative to the common static price axis when the market changes,” respectively. Defendants have concluded that the substance of their previously proposed language is already inherent in the constructions made by Judge Moran. Defendants have also concluded that the term “at least one of the first and second indicators moves” as used in the ’304 patent can be interpreted simply according to the ordinary meaning in the context of the claims in which this term is used. Thus, these terms no longer require construction by the Court.

V. ARGUMENT

A. The Meaning of “*market depth*”

Term	TT Definition	Defendants’ Definition
“market depth”	ordinary meaning	<i>Current bid and ask prices and quantities in the market away from the inside market.</i>

The term “market depth” is found in independent Claims 1, 8, and 14 and dependent Claims 20, 21, 23, 27-29, 53 and 55 of the ’132 patent.

1. Defendants’ Definition of “*market depth*”

The claim language itself, as well as the initial references to “*market depth*” in the specification of the ’132 patent, support Defendants’ construction that it means: “current bid and ask prices and quantities in the market away from the inside market.” There is, however, some language in the patent that supports a broader construction of “*market depth*” that would include the “inside market.”

Claim construction begins with the words of the claims themselves. *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335 (Fed. Cir. 1998). Claim 1 of the '132 patent contains the phrase “*market depth*” and is illustrative of its use in the other independent claims:

1. A method of placing a trade order for a commodity on an electronic exchange having an inside market with a highest bid and a lowest ask price, using a graphical user interface and a user input device, said method comprising:

setting a preset parameter for the trade order

displaying *market depth* of the commodity, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including at least a portion of the bid and ask quantities of the commodity, the dynamic display being aligned with a static display of prices corresponding thereto, wherein the static display of prices does not move in response to a change in the inside market;

displaying an order entry region aligned with the static display prices comprising a plurality of areas for receiving commands from the user input devices to send trade orders, each area corresponding to a price of the static display of prices; and

selecting a particular area in the order entry region through a single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.

Joint App. Ex. 1 at Col. 12, ll. 1-27 (emphasis added).

From just the claim language itself, it is evident that “*market depth*” includes a “plurality of bids and a plurality of asks in the market for the commodity.” Joint App. 1, Col. 12, ll. 9-10.

The same is evident from the language of the specification. For example, the Summary of the Invention section states:

The “Mercury” display and trading method of the present invention ensure fast and accurate execution of trades by displaying **market depth** on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market price fluctuates. This allows the trader to trade quickly and efficiently.

Joint App. Ex. 1 at Col. 3, ll. 5-10 (emphasis added). Later in Column 3, the specification expressly defines “*market depth*” in an all-inclusive manner: “A commodity’s **market depth** is the current bid and ask prices and quantities in the market.” Joint App. Ex. 1 at Col. 3, ll. 59-61.

Still later in Column 4, the specification refers to “*market depth*” as follows:

Market Depth represents the order book with the current bid and ask prices and quantities in the market. In other words, **Market Depth** is each bid and ask that was entered into the market, subject to the limits noted below, in addition to the inside market.

Joint App. Ex. 1 at Col. 4, ll. 54-58 (emphasis added). The first sentence in the above quote expressly defines “*market depth*” as “the order book with the current bid and ask prices and quantities in the market.” This language is all-inclusive. It is with the **second** sentence in the above quote that the ambiguity begins. On the one hand, this sentence starts with the phrase “[i]n other words,” indicating that what follows is merely a restatement of the prior sentence. On the other hand, the meaning of the phrase “in addition to” is unclear. The phrase can be understood to have a meaning along the lines of “as well as;” but, it can also be understood to have a meaning along the lines of “besides,” which means “except”. *See, e.g.*, Merriam-Webster on-line dictionary. If the latter is intended, then the market depth would **not** include the inside market.

Moving from Column 4 of the ’132 patent, which contains the above-noted language, to Column 5 at lines 10-65, the patentees included a discussion of Figure 2 of the patent. At this point, the definition of “market depth” is clearly less inclusive and more limited. In connection with the discussion of Figure 2, the patentees in several places conjunctively refer to the terms “inside market” and the “*market depth*” as constructs that are separate and distinct. For example, at one point, the language states:

This display shows the **inside market** and the **market depth** of a given commodity being traded. Row 1 represents the “**inside market**” for the

commodity being traded which is the best (highest) bid price and quantity and the best (lowest) ask price and quantity. Rows 2-5 represent the “**market depth**” for the commodity being traded.

Joint App. Ex. 1 at Col. 5, ll. 14-20 (emphasis added).

Other statements in Column 5 are to a similar effect: “Prices and quantities for the inside market **and** market depth update dynamically on a real-time basis as such information is relayed from the market.” *See* Joint App. Ex. 1 at Col. 5, ll. 25-28 (emphasis added). “Having the dynamic **market depth** ... displayed **below** the current **inside market** of the commodity conveys the information to the user in a more intuitive and easily understandable manner.” *See* Joint App. Ex. 1 at Col. 5, ll. 58-61 (emphasis added). In these discussions, the “*market depth*” and “inside market” are treated as separate.

Moving on to Columns 7 and 8, in the discussion of the “Mercury” display embodying the alleged invention, the patentees again refer to the “inside market” and “*market depth*” as distinct. This is seen in Column 8 lines 38-48, which refer to the “inside market and market depth” as each ascending and descending the price line.¹⁶ (Figures 3-5, which purport to depict the alleged invention, do not shed any light on the issue as those figures show all bids and asks but do not identify which among them constitute the market depth.)

Turning to the file history and other intrinsic evidence, we again observe ambiguity in the definition of “*market depth*.”

During the prosecution of the ’132 patent in the Petition to Make Special, it is stated that:

Specifically, the present invention is directed to a graphical user interface for displaying the market depth of a commodity traded in a market, including a **dynamic** display for a plurality of bids and for a plurality of asks in the market for the commodity and a **static** display of prices corresponding to the plurality of bids

¹⁶ As a related issue, the reference in the sentence at Col. 8 lines 44-47 to “bids and asks” is unclear, as that phrase is in the plural. The sentence, however, addresses the inside market, which consists of only one bid (price and quantity) and only one ask (price and quantity).

and asks... By allowing the trader to see the dynamic market depth of a commodity and to trade directly within the market depth of that commodity, the invention provides the trader with improved versatility and efficiency in placing, and thus executing, trade orders for commodities in an electronic exchange. The intuitive grid display and trading method of the present invention ensure fast and accurate execution of trades by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market prices fluctuates.

Joint App. Ex. 18 at JA 000139-140 (bold and italics in original).

Further in the October 9, 2001 Amendment, the applicants stated:

Specifically, the present invention is directed to allowing for the placement of trade orders in an intuitive display of market depth of a commodity trade in a market... By allowing the trader to see the dynamic market depth of a commodity and to trade directly within the market depth of that commodity, the invention provides the trader with improved versatility and efficiency in placing, and thus executing, trade orders for commodities in an electronic exchange. The intuitive grid display and trading method of the present invention ensure fast and accurate execution of trades by displaying market depth.

Joint App. Ex. 35 at JA 000195-196.

While the two preceding quotations do not explicitly state what constitutes the “*market depth*,” for an invention directed to trading, it would make sense for the “inside market” to be included as the “inside market” represents the area where trading activity is most likely to take place.

Also, during the prosecution of the ’304 patent, applicants filed an amendment, dated September 26, 2002, which states:

As discussed with the Examiner, the new claims are directed to a method of dynamically displaying market information relative to the static price axis. Independent claims 41 [issued claim 1] and 68 [issued claim 28] provide for the display of indicators relating to the **inside market** relative to a common static price axis. These claims do not require the display of indicators **relating to additional market depth**.

Joint App. Ex. 214 at JA 002574 (emphasis added).

By referring to “inside market” and then referring to “additional market depth” all in the same breath, the applicants appear to be stating that the “inside market” is **part of** the “*market depth*.”

However, TT in its original Provisional Application expressly and clearly defines “*market depth*” as **not** including the “inside market:”

Trading Technologies has developed the advanced concepts of Click and Dime trading and the Mercury display. These concepts display “Market Depth” and allow traders to view the Market Depth and to execute trades within the Market Depth with a single click of a computer mouse button. Market Depth represents the order book with the current bid and ask prices and quantities in the market. In other words, Market Depth is each bid and ask that was entered into the market ***that is not the inside market—market depth falls outside the market.***

Joint App. Ex. 3 at JA 000015 (emphasis added). The Provisional Application reiterates this definition in a subsequent statement: “[m]arket depth will list all available next-best bids and asks.” *Id.* at JA 000016.

Despite all this, Judge Moran, in the course of his prior claim construction ruling apparently understood “*market depth*” as including the “inside market:”

That **market depth**, *which includes the best bid and the best ask*, can be displayed on an angle gives further support to plaintiff’s contention that “common” connotes no more than a relationship between the price axis and the bid and ask display regions.”

Soderstrom Decl., Ex.1 at p. 9. (emphasis added). We recognize, however, that this was not a formal construction of the term “*market depth*.”

The patentees also identified a number of prior art patents during the prosecution of the ’132 patent. Such cited prior art is considered “intrinsic evidence.” *V-Formation, Inc. v. Benetton Group SpA*, 401 F.3d 1307 (Fed. Cir. 2005). Four of these cited patents refer to “*market depth*” so as to include the “inside market” within the meaning of “*market depth*.” Three of these patent issued to the same inventors and have the same specification. *See*

Soderstrom Decl., Exs. 16-18. Each deals with a network that includes a number of trader terminals that are used for entering market orders. In the specifications of the patents the inventors define “inside market” as the “best bid and ask,” but elsewhere in the specifications and in the claims they refer to “*market depth*” as including everything. For example, in U.S. patent number 6,098,051, the inventors state in the specification, “Trades are executed at the closing price for exchange-listed issues, and at the midpoint of the **inside market (best bid and ask)** for OTC issues.” Soderstrom Decl. Ex. 16 at Col. 2, ll. 5-9 (emphasis added). But later the patent states in an all-inclusive fashion that “... **market depth** can be indicated by the quantity of non-zero satisfaction density values entered at each price/quantity grid point...” *Id.* at Col. 12, ll. 47-49 (emphasis added).

Similarly, in U.S. patent number 5,297,032 issued to Trojan (the “’032 patent”), also cited in the ’132 and ’304 patents, the inventor makes reference to “*market depth*” as including the “inside market.” *See* Soderstrom Decl., Ex. 19. The inventor refers to “the number of market makers on the inside market for respective bid and ask quotes,” and then states “This number provides an indication of the depth of the market for that security,” thus, treating the “inside market” as part of the “*market depth*.” *See id.* at Col. 8, ll. 38-42. The inventor again refers to monitoring the “current depth of a market by measuring the number of market makers on the inside and further determining the direction of the market by the changes of ‘inside’ market makers.” *See id.* at Col. 3, ll. 9-16. This once again treats the “inside market” as part of the “*market depth*.”

In fact, Harris Brumfield, one of the very inventors listed in the ’132 and ’304 patents, and presumably one of ordinary skill in the art, filed a separate patent application in June of 2000, which culminated in the issuance of U.S. patent number 7,447,655. *See* Soderstrom Decl.,

Ex. 20. The language of this patent indicates that at that time he considered the “inside market” as part of the “*market depth*.”

Market depth refers to quantity available at the inside market and can refer to quantity available at the prices away from the inside market. The quantity available at a given price level is usually provided by the host exchange in aggregate sums. In other words, a host exchange usually provides the total buy or the total sell quantity available in the market at a particular price level in its data feed. The extent of the market depth available to a trader usually depends on the host exchange. For instance, **some host exchanges provide market depth for an infinite number of price levels, while some provide only quantities associated with the inside market,** and others may provide no market depth at all.

Soderstrom Decl., Ex. 20 at Col. 2, ll. 22-33 (emphasis added).

Mr. Brumfield also testified during the previous trial in the *eSpeed* case, as part of the explanation of his MD Trader product, which embodies the invention of the ’132 and ’304 patents, that “*market depth*” includes the “inside market.”

This is Trading Technologies’ product, MD Trader, which conceptually came from my idea. And over here is the inside market, the dynamic bids and offers. Bids, offers are yellow circles, and this is the top line of that grid. And sometimes **I wouldn’t have the whole depth up. I would just-- sometimes all you needed was the best bid and offer** because that was the market.

Soderstrom Decl., Ex. 21, p. 59, ll. 18-25 (emphasis added).

Elsewhere during his testimony in the *eSpeed* case, he testified likewise:

... These bids would go up, these offers would go up, you actually see a shift in **the actual inside market, and the** rest of the volume-- and when I say the volume, **rest of the depth,** rest of the numbers below, and above...

Id. at p. 152, ll. 15-18 (emphasis added).

By contrast, testimony of other individuals who gave deposition testimony in the *eSpeed* case goes the other way. For example, Kevin Kirby, who designed electronic trading equipment for EccoTrading, a competitor of both TT and GL, testified:

Q: And what do you understand “market depth” to mean?

A: Market depth would mean the other prices below the best or inside market or depending –below or above the inside market.

Soderstrom Decl., Ex. 22 at p. 87, ll. 14-18. And, Defendants themselves, who were permitted to participate in the *eSpeed* Markham hearing, at the time took the position that “*market depth*” as used in the patents did not include the “inside market.”

Articles regarding the electronic trading industry published at or about the time of the filing of the application for the '132 patent also contain conflicting definitions of “*market depth*.” For example, the 1999 API Reference Manual for LIFFE CONNECT, the electronic interface for the London International Financial Futures and Options Exchange, refers to “*market depth*” as “...all prices and aggregate volumes available for buys and sells of a specified outright or strategy market.” See Soderstrom Decl., Ex. 23 at TT0077056; See also Soderstrom Decl., Ex. 24 at G0044943; But compare Soderstrom Decl., Ex. 25 at eS0032328 (which discusses the best bid and ask prices in the market and then refers to “*market depth*” as “the volume of other orders in the book”).

Despite the alternative definitions of “*market depth*” found in both the intrinsic and extrinsic evidence, given in particular the fact that subject patents at times expressly refer to “*market depth*” and “inside market” disjunctively, and the further fact that the patentees in their Provisional Application expressly state that “Market Depth is each bid and ask that is not the inside market--market depth falls outside the market” (Joint. App. Ex. 3, at JA 000015), defendants believe that a person of ordinary skill in the art, having reviewed both the intrinsic and extrinsic evidence, would understand “*market depth*” in the context of the patents to mean **“current bid and ask prices and quantities in the market away from the inside market.”**

2. TT's Position That "*market depth*" Should Be Given Its Common Meaning Adds No Clarity

TT's failure to propose a definition for this term provides no additional clarity to the meaning of the term, and to the extent the term is construed otherwise than in accordance with Defendants' position, it would be inconsistent with the intrinsic record.

B. The Meaning of "*when the inside market changes*" or "*a change in the inside market*"

Term	TT Definition	Defendants' Definition
"when the inside market changes" (Claim 1 of '304 patent) or "a change in the inside market" (Claim 1 of '132 patent)	At the time that new data reflecting a change in the market is received.	<i>At the time that new data reflecting a change in one or more of the best bid price, best bid quantity, best ask price, and best ask quantity is received by the trader's computer.</i>

The phrase "*when the inside market changes*" is found in Claims 1 and 27 of the '304 patent and the phrase "*a change in the inside market*" is found in Claims 1 and 8 of the '132 patent. Because these patents are related, it is appropriate that these two terms should be interpreted consistently. *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004)(holding that statements made in prosecution of one patent are relevant to the scope of all related patents); *Laitram Corp. v. Morehouse Indus., Inc.*, 143 F.3d 1456, 1460 & n. 2 (Fed. Cir. 1998) (same).

1. Defendants' Definition of "*when the inside market changes*" and "*a change in the inside market*" Is Required by the Intrinsic Record

The use of the phrase "*when the inside market changes*" in Claim 1 of the '304 patent is illustrative of its use elsewhere in the patents-in-suit, and indicates that the term "*inside market*" includes price and quantity. Specifically, Claim 1 reads in pertinent part:

displaying the bid and ask display regions in relation to fixed price levels positioned along the common static price axis such that **when the inside market changes**, the price levels along the common static price axis do not move and **at least one of the first and second indicators moves in the bid or ask display regions** relative to the common static price axis;¹⁷

Joint App. Ex. 2 at Col. 12, ll. 55-61 (emphasis added).

In conjunction with this limitation and the preceding “dynamically displaying” limitations of Claim 1 of the ’304 patent, the “first” and “second” indicators represent “**quantity** associated with at least one order to buy the commodity at the highest bid price currently available in the market” and “**quantity** associated with at least one order to sell the commodity at the lowest ask price currently available in the market,” respectively. Joint App. Ex. 2 at Col. 12, ll. 40-54 (emphasis added).

Looking at the specifications of the patents-in-suit it again is clear that the “*inside market*” includes both price and quantity. In discussing Figure 2 of the patent, the specification of the ’304 patent and ’132 patent states, “Row 1 represents the ‘inside market’ for the commodity being traded **which is the best (highest) bid price and quantity and the best (lowest) ask price and quantity.**” Joint App. Ex. 2 at Col. 5, ll. 19-23; Joint App. Ex. 1 at Col. 5, ll. 16-19 (emphasis added).

In discussing Figure 3 of the patent, the specifications of the ’304 patent and ’132 patent again define the “*inside market*” as containing the best bid price and quantity and best ask price and quantity and give a specific example: “In the example shown, the inside market, cells 1020, is 18 (best bid quantity) at 89 (best bid price) and 20 (best ask quantity) at 90 (best ask price).”

¹⁷ The language of Claim 27 of the ’304 patent is essentially identical insofar as it relates to construction of the term “when the inside market changes.” Joint App. Ex. 2 at Col. 14, l. 47 – Col. 15, l. 7. Claim 14 of the ’132 patent likewise refers to “an inside market with the highest bid price and lowest ask price” and to the displaying of “bid and ask quantities” “aligned with” the “display prices.” Joint App. Ex. 1 at Col. 13, ll. 55-67. Claims 1 and 8 of the ’132 patent similarly use the term “a change in the inside market.”

Joint App. Ex. 1 at Col. 7, ll. 40-42; Joint App. Ex. 2 at Col. 7, ll. 59-61. Thus, the specifications of the patents-in-suit expressly define the “*inside market*” as “the best (highest) bid price and quantity and the best (lowest) ask price and quantity.”¹⁸

Elsewhere the specifications of the patents-in-suit further state: “Prices and quantities for the inside market and market depth update dynamically on a real-time basis as such information is relayed from the market.” Joint App. Ex. 1 at Col. 5, ll. 25-28; Joint App. Ex. 2 at Col. 5, ll. 29-31. If both “prices” and “quantities” for the “*inside market*” and “*market depth*” update dynamically, then, by the patentees’ own definition, whenever there is a change in either a price or a quantity, there is a change in the “inside market.”

Moreover, in the file history of the ’304 patent, the applicants stated: “[i]ndependent claims 41 and 68 provide for the display of indicators relating to the inside market relative to a common static price axis.” Joint App. Ex. 214 at JA 002574. As used in this context, the “indicators” are clearly numerical quantities associated with the “*inside market*” and separate from the “price axis.”¹⁹

Also, in the Provisional Application, the applicants stated: “**The Bid and Ask quantities and prices in the above market grid represent the “Inside Market”, which is the best bid and ask quantities and prices in the market.**” Joint App. Ex. 3 at JA 000011-12 (emphasis added).

With regard to the terms “when” and “changes”, Judge Moran in his 2006 Markman ruling construed the phrase “when the market changes” stating that “‘when’ is not synonymous with ‘instantaneously.’ Rather, ‘when’ encompasses the concept that the update will not appear

¹⁸ We note, however, that there is a single instance in the specification where the term “inside market” is used without a reference to quantity. See Joint App. Ex. 1 at Col. 4 ll. 58-60.

¹⁹ Further modified versions of Claims 41 and 68 became issued claims 1 and 27 of the ’304 patent.

on the trader's screen until the software and/or computer receives, processes, and displays the new market information." *See* Soderstrom Decl., Ex. 1 at p. 18. Judge Moran further stated that "when the market changes" is construed as "at the time that new data reflecting a change in the inside market is received." *Id.*

In sum, "when the inside market changes" means: **"at the time that new data reflecting a change in one or more of the best bid price, best bid quantity, best ask price, and best ask quantity is received by the trader's computer."** Likewise, "a change in the inside market" means **"at the time that new data reflecting a change in one or more of the best bid price, best bid quantity, best ask price, and best ask quantity is received by the trader's computer."**

2. TT's Construction is Incomplete

TT's construction is incomplete. TT's position is that the phrase "when the inside market changes" should be construed simply as "at the time that new data reflecting a change in the market is received." However, TT's construction does not specify what the "new data" is that defines the point in time "when the inside market changes." Defendants' construction more accurately defines the point in time "when the inside market changes" as **"at the time that new data reflecting a change in one or more of the best bid price, best bid quantity, best ask price, and best ask quantity is received by the trader's computer."**

For the reasons noted above, Defendants' definition more naturally aligns with the language of both the claims and the specification and should, therefore, be adopted by this Court as the correct construction.

C. The Meaning of “*a display device for displaying*”

Term	TT Definition	Defendants’ Definition
“a display device for displaying”	ordinary meaning	<i>A terminal screen or device for displaying graphics.</i>

The term “*a display device for displaying*” is found in Claim 14 of the ’132 patent.

1. Defendants’ Definition of “*a display device for displaying*” Is Required by the Intrinsic Record

As noted, claim construction begins with the words of the claims themselves. *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335 (Fed. Cir. 1998). That portion of Claim 14 of the ’132 patent which contains the phrase “*display device for displaying*” reads as follows:

a display device for displaying market depth of a commodity, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including the bid and ask quantities of the commodity, aligned with a static display of prices corresponding thereto, wherein the static display of prices does not move when the inside market changes, and for displaying an order entry region aligned with the static display of prices, comprising a plurality of areas for receiving commands to send trade orders, each area corresponding to a price of the static display of prices.

Joint App. Ex. 1 at Col. 13, l. 61 to Col. 14, l. 5 (emphasis added). The above claim language does not provide a definition of “*a display device for displaying*,” but it is evident from the context that it must be capable of rendering a “dynamic display,” which implies a graphical capability.

The specification provides more information regarding the type of display device and where it is located. It explains that “[t]he present invention is directed to the electronic trading of commodities”. Joint App. Ex. 1 at Col. 1, ll. 11-12. It also notes that “[a]t least 60 exchanges throughout the world utilize electronic trading...” and that “[t]hese electronic exchanges are based on three components: mainframe computers (host), communication servers, and the exchange participants’ computers (client). Joint App. Ex. 1 at Col. 1, ll. 21-22 and ll. 23-26. It

further notes that “[t]raders can link to the host through three types of structures: high-speed data lines, high-speed communication servers and the Internet.” Joint App. Ex. 1 at Col. 1, ll. 35-37.

The specification then states:

Irrespective of the way in which a connection is established, the exchange participants’ **computers** allow traders to participate in the market. They use software that creates specialized interactive trading **screens** on the traders’ **desktops**. The trading **screens** enable traders to enter and execute orders, obtain market quotes, and monitor positions.

Joint App. Ex. 1 at Col. 1, ll. 55-60 (emphasis added).

From the above it is evident that, at a minimum, the “*display device for displaying*” referenced in the claim is a client computer screen used by a trader to connect with a host computer at an electronic exchange. This arrangement is shown by the diagram in Figure 1 of the patent. The specification states, “This figure shows multiple host exchanges 101-103 connected through routers 104-106 to gateways 107-109. Multiple **client terminals** 110-116 for use as trading stations can then trade in the multiple exchanges...” Joint App. Ex. 1 at Col. 4, ll. 23-27 (emphasis added).

In continuing to describe the diagram in Figure 1, the specification alternates between the phrases “client workstation” and “client terminal:”

Information from different exchanges can be displayed at one or in multiple **windows** at the **client workstation**.

... while reference is made ... to a single exchange to which a trading **terminal** is connected, the scope of the invention includes the ability to trade... in multiple exchanges using a single trading **terminal**.

Joint App. Ex. 1 at Col. 4, ll. 42-49 (emphasis added).

There are numerous other references throughout the patent which consistently refer to the display device as a “screen:”

The physical mapping of such information to a **screen** grid can be done by any technique... *Id.* at Col. 4, ll. 66-67 (emphasis added).

The present invention is not limited by the method used to map the data to the **screen** display. *Id.* at Col. 5, ll. 1-3 (emphasis added).

The user of the present invention can also choose how far into the market depth to display on his **screen**. *Id.* at Col. 5, ll. 8-10 (emphasis added).

Fig. 2 illustrates a **screen** display... *Id.* at Col. 5, l. 11 (emphasis added).

There are also multiple similar references to a “**screen**” elsewhere in the patent and provisional patent application. *See* Joint App. Ex. 1 at Col. 5, l. 29; Col. 5, l. 46; Col. 5, ll. 66-67; Col. 8, l. 40; Col. 8, l. 51; Col. 8, ll. 56-57; Col. 8, l. 60; Col. 9, l. 61; *See also* Joint App. Ex. 3 at pp. JA 000003, JA 000009, JA 000014, JA 000015, JA 000021, JA 000023, JA 000032, JA 000034, and JA 000044-45.

The only question remaining is what type of screen the client terminal has. As mentioned at the outset, the language of the claim itself implies it is capable of displaying graphics. The specification expressly states that this is the case: “Specifically, the present invention is directed to a **graphical user interface**...” Joint App. Ex. 1 at Col. 3, ll. 11-12 (emphasis added).

The specification, however, notes that:

[i]t is envisioned that the system of the present invention can be implemented on any existing or future **terminal** or **device** with the processing capability to perform the functions described herein. The scope of the present invention is not limited by the type of **terminal** or **device** used.

Joint App. Ex. 1 at Col. 4, ll. 4-9 (emphasis added). In light of the above qualification, it is evident that the proper definition of “*display device for displaying*” is “a client terminal or device screen for displaying graphics.”

Although the term “*display device for displaying*” is followed by a description of how the screen is used (e.g., to show “a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity... aligned with a static display of prices”), it would be inappropriate to further define “display device for displaying” in terms of how the screen is used.

It is well established that “apparatus claims cover what a device is, not what a device does.” *Hewlett-Packard Co. Bausch & Lomb, Inc.*, 909 F.2d 1464, 1468 (Fed. Cir. 1990). As the court stated in *Paragon Solutions, LLC. v. Timex Corp.*:

Construing a...term in an apparatus claim in a way that makes direct infringement turn on the use to which an accused apparatus is later put confuses rather than clarifies, frustrates the ability of both the patentee and potential infringers to ascertain the propriety of particular activities, and is inconsistent with the notice function central to the patent system.

Paragon Solutions, LLC. v. Timex Corp., 566 F.3d 1075, 1091 (Fed. Cir. 2009); *see also*, *Catalina Mktg. Int’l. v. Coolsavings.com, Inc.*, 289 F.3d 801, 809 (Fed. Cir. 2002)(“a patent grants a right to exclude others from...selling...the claimed apparatus or composition for **any use** of that apparatus or composition”) (emphasis added); *Roberts v. Ryer*, 91 U.S. 150, 157 (1875)(“The inventor of a machine is entitled to the benefit of all the uses to which it can be put, no matter whether he had conceived the idea of the use are not.”). Therefore, the language further describing the “*display device for displaying*” in Claim 14 of the ’304 patent should not be construed as a limitation and doing so would be an improper “use” restriction.

Thus, in light of the foregoing, one of ordinary skill in the art, after reading the claim and the intrinsic record, would understand the term “display device for displaying” to mean: “**a terminal screen or device for displaying graphics.**”

2. TT’s Position That “*display device for displaying*” Should Be Given Its Common Meaning Adds No Clarity

TT’s failure to propose a definition for this term provides no clarity to the meaning of the term, and to the extent the term is construed otherwise than in accordance with Defendants’ definition, it would be inconsistent with the intrinsic record for all of the reasons noted above.

D. The Meaning of “*setting a preset parameter for the trade order*”

Term	TT Definition	Defendants’ Definition
“setting a preset parameter for the trade order”	ordinary meaning	<i>The trader setting a parameter for a future trade order.</i>

The term “*setting a preset parameter for the trade order*” is found in Claims 1, 8, and 14 of the ’132 patent.

1. Defendants’ Definition of “*setting a preset parameter for the trade order*” Is Required by the Intrinsic Record

The language of Claim 1 of the ’132 patent is set forth in its entirety at page 12, *infra*. Reduced to its essence, Claim 1 of the ’132 patent describes the use of a user input device in connection with a graphical user interface to set parameters and send an order to market. Because only a “user” (i.e., the trader) would use a “user input device,” the implication is that it is the trader that sets a preset parameter for a trade order.

This conclusion is fully supported by the specification. In fact, Column 9 of the specification expressly states that it is the trader who sets the parameters for the trade order:

Using the Mercury display and trading method, a **trader** would first designate the desired commodity and, if applicable, the default quantities [i.e., parameters]. Then he can trade with single clicks of the right or left mouse button.

Joint App. Ex. 1 at Col. 9, ll. 5-9 (emphasis added).

Orders can also be sent to market for quantities that vary according to the quantities available in the market; **quantities preset by the trader**, and which mouse button the trader clicks... **The trader can also add or subtract a preset quantity** from the quantities outstanding in the market.... **The parameters of the order depend on which mouse button he clicks and what preset values he set.**

Joint App. Ex. 1 at Col. 9, ll. 50-60 (emphasis added).

Figure 6 of the specification further reinforces the fact that it is the trader who is setting preset parameters for trade orders. The specification describes the boxes in Figure 6 as follows:

First in step 1301, **the trader** has the Mercury display on the trading terminal screen showing the market for a given commodity. In step 1302, **the parameters are set in the appropriate fields**, such as the L and R fields and the Current Quantity, NetPos or Offset fields from the pull down menu. In step 1303, **the mouse pointer is positioned and clicked** over a cell in the Mercury display **by the trader**.

Joint App. Ex. 1 at Col. 11, ll. 15-22 (emphasis added).

If the foregoing were not clear enough, the Provisional also states that it is the trader who sets the preset parameters:

Orders can also be sent to market for quantities that vary according to the quantities in the market; **quantity variables preset by the trader... The trader could also add or subtract a preset quantity** from the quantities outstanding in the market. If the trader clicks in a trading cell – i.e. in the BidQ or AskQ column, he will enter an order in the market. The parameters of the order depend on which mouse button he clicks and **what preset values he set**.

Joint App. Ex. 3 at JA 000035 (emphasis added).

Thus, in light of the claim language, the patent specification, the file history, and the provisional patent application, a person of ordinary skill in the art would understand the “*setting a preset parameter for the trade order*” limitation in Claim 1 of the ’132 patent to mean, **“the trader setting a parameter for a future trade order.”**

2. TT’s Position That “*setting a preset parameter for the trade order*” Should Be Given Its Common Meaning Adds No Clarity

TT’s failure to propose a definition for this term provides no clarity to the meaning of the term, and to the extent the term is construed otherwise than in accordance with Defendants’ definition, it would be inconsistent with the intrinsic record for all of the reasons noted above.

- E. The Meaning of (1) *“through single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange”* and (2) *“a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange”*

Term	TT Definition	Defendants’ Definition
“through single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.”	ordinary meaning	<i>The trader by a single action of a user input device with a pointer of the user input device positioned over a particular area sets additional parameters and sends a trade order through a terminal to the electronic exchange.</i>
“a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange.”	ordinary meaning	<i>The trader by a single action of a user input device sets additional parameters and sends a trade order through a terminal to an electronic exchange.</i>

1. *“through single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange”*

a. **Defendants’ Definition of this Term Is Required by the Intrinsic Record**

The above-quoted claim language is found in Claim 1 of the ’132 patent:

1. A method of placing a trade order for a commodity on an electronic exchange having an inside market with a highest bid price and lowest ask price, using a graphical user interface and a user input device, said method comprising:

selecting a particular area in the order entry region **through single action of the user input device with a pointer of the user input device**

positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.

Joint App. Ex. 1 at Col. 12, ll. 2-27 (emphasis added).

The above-quoted preamble of Claim 1 indicates that the claim is directed to a method of placing a trade order using a graphical user interface and a user input device. The portion of the last limitation in bold type, which is the term to be construed, further indicates that the pointer of the user input device is positioned over a particular area to set a plurality of additional parameters (e.g., price and quantity) and send the order to the electronic exchange. From just the language of the claim itself, it is apparent that it is the user (trader) who is setting the parameters and sending this trade order. Only a “user” would be using a “user input device” and positioning the pointer over the particular area to send a trade order.

This conclusion is abundantly supported by the specification. Starting with the very first line of the Abstract, the inventor defines his invention as, “A method and system for reducing the time it takes for a **trader** to place a trade when electronically trading on an exchange....” Joint App. Ex. 1, Abstract (emphasis added). The last line of the Abstract similarly concludes, “This allows the **trader** to trade quickly and efficiently.” *Id.*

Under the Background of the Invention and the Summary of the Invention sections of the specification, there are repeated references to the fact that it is the trader who is manually entering the orders:

The trading screens enable **traders** to enter and execute orders, obtain market quotes, and monitor positions.

Joint App. Ex. 1 at Col. 1, ll. 59-60 (emphasis added).

The remainder of the total time it takes to place an order... is attributable to the time required for the **trader** to read the prices displayed and to enter a trade order. The present invention provides a significant advantage during the slowest portion of the trading cycle--while the **trader manually enters his orders**.

Joint App. Ex. 1 at Col. 2, ll. 34-39 (emphasis added).

Likewise, under the Detailed Description of the Preferred Embodiments, the specification contains repeated references to the trader manually clicking on various items to set parameters and send the trade order:

Using the screen display and values from FIG. 5, the placement of trade orders using the Mercury display and trading method is now describe using examples. A left click on the 18 [by the **trader**] in the BidQ column 1201 [a **parameter**] will send an order to market to sell 17 lots ...of the commodity at a price of 89 [another **parameter**].

Joint App. Ex. 1 at Col. 9, ll. 63-67 (emphasis added).

Thus, a left click [by the **trader**] in the BidQ column 1201 [a **parameter**] in the 92 price row [another **parameter**] will send a buy order to market at a price of 92 and a quantity of 96. 96 is the sum of all the quantities 45, 28, 20 and 3. 45, 28 and 20 are all quantities in the market that would meet or better the trader's buy order price of 92. The quantity 3 is a quantity pre-set in the L field 1206.

Joint App. Ex. 1 at Col. 10, ll. 33-35 (emphasis added).

The fact that it is the trader who sets additional parameters and sends an order to the market is also evident from Figure 6 of the '132 patent. Box 1313 in Figure 6 asks whether the column is clicked [by the **trader**]. *See* Joint App. Ex 1, at Figure 6. The flowchart then indicates that if BidQ is clicked, a buy order will be sent to market for the predefined quantity at "the price of the row clicked" [an additional **parameter**]. *See id.* at Box 1315. Alternatively if AskQ is clicked, a sell order will be sent to market for the defined quantity at "the price of the row clicked" [an additional **parameter**]. *See id.* at Box 1314.

Equally important, Judge Moran stressed in his Opinion that both of plaintiff's patents should be construed from the perspective of the user:

Like plaintiff's patents as a whole, "order entry region" should be viewed from the perspective of the **user**, not the computer. With that in mind we accept defendants' argument that "order entry region" is a location within the trading display where a **user** *sends* and not simply *initiates* an order.

Soderstrom Decl., Ex. 1 at p. 14 (italics in the original).

Later, when discussing “single action of the user input device,” Judge Moran reiterated that the patents should be viewed from the perspective of the user:

eSpeed’s attempt harkens back to the pop-up window, and focuses the “single action” on the computer, rather than the **user**. As we have continually noted, however, plaintiff’s patents generally were written from the perspective of the **user**. Therefore, this claim refers to the **user’s** single action, not the action(s) the computer performs to execute the user’s command.

Id. at p. 15 (emphasis added).

Thus, after reading the claims, the specification, the Provisional, the file history, and Judge Moran’s previous opinion in this case, one of ordinary skill in the art would understand the term “*through single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange*” to mean: **“The trader by a single action of a user input device with a pointer of the user input device positioned over a particular area sets additional parameters and sends a trade order through a terminal to the electronic exchange.”**

b. TT’s Position That “*the trader by a single action of a user input device sets additional parameters and sends a trade order through the trader’s terminal to an electronic exchange*” Should Be Given Its Common Meaning Adds No Clarity

TT’s failure to propose a definition for this term provides no clarity to the meaning of the term, and to the extent the term is construed otherwise than in accordance with Defendants’ definition, it would be inconsistent with the intrinsic record for all of the reasons noted above.

2. **“a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange”**

a. **Defendants’ Definition of this Term Is Required by the Intrinsic Record**

The above term is found in the last limitation of Claim 1 of the ’304 patent:

in response to a selection of a particular location of the order entry region by a **single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange.**

Joint App. Ex. 2 at Col. 12, l. 67 to Col. 13, l. 3 (emphasis added).

The above claim language is substantially similar to the language found at essentially the same location in the last limitation of Claim 1 of the ’132 patent. Because these two patents are related, it is appropriate these two terms should be interpreted consistently. *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F. 3d 1340, 1350 (Fed. Cir. 2004). Such consistency of interpretation makes particular sense in this case because the specification of the two patents are completely identical, with the exception of one sentence stating that the ’304 patent application is a divisional application which claims the benefit of the filing date of the ’132 patent application.

Because the claim language is essentially identical and because the specification of each patent is for all practical purposes identical, a person of ordinary skill in the art after reading the claims and the intrinsic record would, for all the reasons previously stated, understand the term “a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange” to mean:

“The trader by a single action of a user input device sets additional parameters and sends a trade order through a terminal to an electronic exchange.”²⁰

3. TT’s Position That “*a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange*” Should Be Given Its Common Meaning Adds No Clarity

Again, TT’s failure to propose a definition for this term provides no clarity to the meaning of the term, and to the extent the term is construed otherwise than in accordance with Defendants’ definition, it would be inconsistent with the intrinsic record for all of the reasons noted above.

F. The Meaning of “*exchange order book*”

Term	TT Definition	Defendants’ Definition
Exchange order book	The bid and ask prices and respective quantities for a specified commodity maintained by an exchange	<i>The bid and ask prices and respective quantities maintained by an exchange for all traded commodities.</i>

The term “*exchange order book*” is found in dependent claims 53-55 of the ’132 patent, and in dependent claims 37-39 in the ’304 patent.

1. Defendants’ Construction of “*exchange order book*” is Required By the Intrinsic and Extrinsic Record

The term “*exchange order book*” is not found anywhere in the patents’ specification or in the file histories, except when it is introduced by amendment in the claims. *See* Joint App. Exs. 72-74 and 93-95. The specification does, however, discuss “order books” when discussing the preferred embodiments of the invention: “In addition, the storage at gateway servers and at

²⁰ Judge Moran in 2006 construed “single action of a user input device” to be “an action by a user within a short period of time that may comprise one or more clicks of a mouse button or other input device.” Soderstrom Decl., Ex. 1 at p. 15.

the client workstations, and/or other external storage cache historical data such as **order books which list the client's active orders in the market; that is, those orders that have neither been filled nor cancelled.**" Joint App. Ex. 1 at Col. 4, ll. 37-42 (emphasis added). Similarly, when the patent describes the term "market depth of a commodity," it explains that: "The preferred embodiments of the present invention include the display of 'Market Depth' and allow traders to view the **market depth of a commodity** and to execute trades within the market depth with a single click of the computer mouse button. Market Depth represents the **order book** with the current bid and ask prices and quantities in the market." Joint App. Ex. 1 at Col. 4, ll. 50-54 (emphasis added). In this example, it is clear that the patentees equate market depth on a display screen with one or more commodities, and the display of market depth includes displaying the order book with the current bid and ask prices and quantities for one or more given commodities.

Although the specification refers to "order books," the claims refer instead to "*exchange order book*," such as in claim 53:

The method of claim 1 wherein the market depth is based on **an exchange order book** and wherein the static display of prices does not move in response to the addition a price to the exchange order book, the additional price comprising a displayed price.

Joint App. Ex. 1 at Col. 16, ll. 43-47 (emphasis added).

During claim construction, "claims are interpreted with an eye toward giving effect to all terms in the claims." *Elekta Instrument S.A. v. O.U.R. Scientific Int'l, Inc.*, 214 F.3d 1302, 1305, 1307 (Fed. Cir. 2000)(claim language "only within a zone extending between latitudes 30°-45°" does not read on a device with radiation sources extending between 14 and 43 because "[a]ny other conclusion renders the reference to 30° superfluous"). Therefore, the addition of the word "exchange" must have some meaning in this context.

As used throughout the intrinsic record, an “exchange” is uniformly used to refer to a stock, commodity, or future exchange, typically in which many stocks, commodities, or futures can be traded:

At least 60 exchanges throughout the world utilize electronic trading in varying degrees to trade stocks, bonds, futures, options and other products.

Joint App. Ex. 1 at Col. 1, ll. 20-23.

The world’s stock, bond, futures and options exchanges have volatile products with prices that move rapidly.

Joint App. Ex. 1 at Col. 2, ll. 1-2.

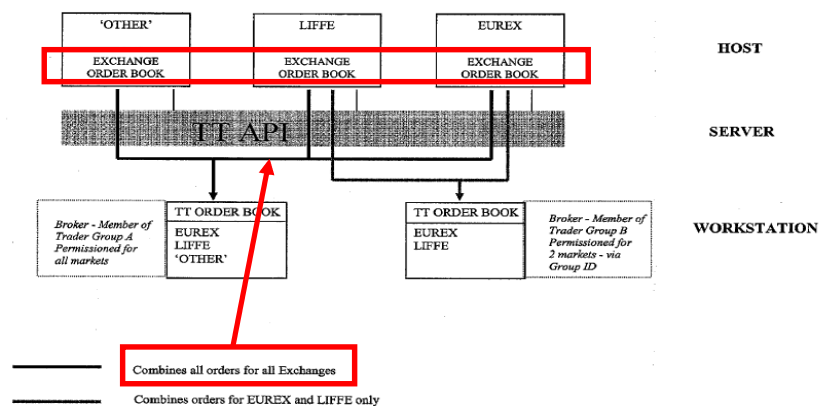
The invention provides traders the option to trade on multiple exchanges from one screen. “The system can be configured to allow for trading in a single or multiple exchanges simultaneously.” Joint App. Ex. 1 at Col. 4, ll. 20-24. Likewise, the invention permits a trader to trade multiple commodities on a single exchange. *See* Joint App. Ex. 1, Abstract (“A method and system for reducing the time it takes for a trader to place a trade when electronically trading on an exchange.”). Therefore, the use of the term “exchange” in conjunction with “order book” describes and references not simply the “order book” for a simple commodity, but for all commodities; namely, the “*exchange order book*” is all of the current open orders, or bids and asks, for all commodities being traded on the exchange.

The extrinsic evidence from the time of the invention is consistent with this construction. SEC rule 3b-16 promulgated by the Securities Exchange Commission in 1999 defined “exchange” as “any organization, association, or group of persons that (1) bring together the orders of multiple buyers and sellers; and (2) uses established non-discretionary methods (whether by providing a trading facility or by setting rules) under which such orders interact with each other, and the buyers and sellers entering such orders agree to the terms of a trade.” Soderstrom Decl., Ex. 26 at G0116018; 17 C.F.R. § 240.3b-16 (1998).

The Securities Exchange Act § 3(a)(1) defines an “exchange” as “any organization, association, or group of persons, whether incorporated or unincorporated, which constitutes, maintains, or provides a market place or facilities for bringing together purchasers and sellers of securities or for otherwise performing with respect to securities the functions commonly performed by a stock exchange as that term is generally understood, and includes the market place and the market facilities maintained by such exchange.” 15 U.S.C. § 78c(a)(1). Given this widely understood definition of an “exchange,” an exchange’s order book must be understood to include all open orders, not simply the orders of just one commodity.

In a March 1999 document in which TT describes its trading software, TT describes its use of a “global order book that will be populated initially by all electronic exchange orders and enable the entry of orders prior and post market hours.” Soderstrom Decl., Ex. 27 at TT 025410. Then in an appendix containing a “functional schematic” of TT’s order book sharing, TT refers to the “exchange order book[s]” for the EUREX and LIFFE²¹ exchanges, and an “OTHER” generic exchange:

APPENDIX 1



²¹ EUREX is a European derivatives exchange, and LIFFE is the London International Futures and Options Exchange.

Id. at TT 025413. When describing the solid line from the exchanges, through the TT API to the workstation, TT describes it as “combines **all orders** for all Exchanges.” *Id.* (emphasis added). It is thus clear that TT understood at the time of the invention that an exchange order book comprised all orders for all commodities of an exchange.

Similarly, a July 4, 1998, article in the Guardian (London), discussing the London Stock Exchange and the FTSE index (an index of highly traded stocks on the London exchange), exclaimed that: “Second-busiest stock of the day was British Biotech, still coming to terms with being the only stock in the FTSE SmallCap index traded on **the Stock Exchange order book**, which edged up 3p to 32p as more than 16 million shares changed hands.” Soderstrom Decl., Ex. 28 at p. 2 (emphasis added). It is clear from this context that the exchange order book covers all stocks traded on the exchange.

In February 7, 2000, an article about the London Stock Exchange and Barclays Global Investor’s race to introduce index-tracking exchange-traded funds in Europe also refers to the “exchange’s order book.”

In an increasingly competitive environment where the traditional European stock exchanges are vying for listings and trading volumes, London will be keen to beat Frankfurt to the winning post with these new products. BGI would set up and administer the exchange-traded fund that would track an index. Ordinary shares would then be traded on the relevant **exchange’s order book**.

Soderstrom Decl., Ex. 29 (emphasis added). Again, the context makes clear that the exchange’s order book is for tracking all of the stocks traded in the exchange.

Likewise, an April 1, 1987, article regarding a modified trading system for the Chicago Board of Options Exchange (“CBOE”) refers to trades that may be placed in the “exchange’s public order book” and later also refers to orders placed in the “exchange’s order book.” Soderstrom Decl., Ex. 30 at p. 1.

In none of these instances is there a reference to an exchange's order books — each time the reference is always in the singular to an exchange order book, implying quite strongly that an exchange typically maintains a single order book that includes all orders for all traded items.²² Consequently, Defendants' construction is the only proper interpretation of the term “*exchange order book*,” and, thus, one of ordinary skill in the art would construe “*exchange order book*” to mean “**The bid and ask prices and respective quantities maintained by an exchange for all traded commodities.**”

2. TT's Definition is Inconsistent with the Intrinsic and Extrinsic Evidence

TT defines “*exchange order book*” as “the bid and ask prices and respective quantities for a specified commodity maintained by an exchange.” This definition gives no recognition to the fact that the word “exchange” has been added to the phrase “order book.” For all the reasons previously noted, this addition mandates that “*exchange order book*” must be construed to include all bid and ask prices for all commodities being traded on the exchange, not just for “a specified commodity” being traded by an individual trader.

²² In electronic exchange systems described throughout the intrinsic record, there are many examples of “order books” used for a variety of purposes. *See, e.g.*, U.S. Patent 5,845,266 (describing an “order” book” used by a Reuters-owned electronic trading systems as “a *limit order book* for over-the-counter (OTC) securities and listed securities and also provides inside quotes for exchange listed securities for the seven U.S. exchanges on which stocks can be traded and for NASDAQ listed securities”); U.S. Patent 5,963,923 (describing the Principal Market Maker (“PMM”) rules in the CME the patent states: “the PMM should maintain the ‘public order book’ (collection of public customer orders to purchase or sell) with respect to the assigned products). As these examples make clear, order books are not generic entities, but are defined specifically by the descriptors included in the name, such as “exchange” order book or “limit” order book.

G. All Claims Including the Term “*program code for*” or “*program code to*” Should Be Construed As Means-plus-function Claims And Are Indefinite

1. The “*program code*” Claims Should Be Construed to be Means-Plus-Function Claims

Claims 8-13 and 31-39 of the '132 patent and claim 27 of the '304 patent recite “program code for” to perform a particular function. However, nowhere in the specification are set forth any algorithms, proposed source code, or other structure to define the program code required by these claims. These claims do not recite any appropriate structure, and the program code is only described functionally in the claims. Claim 8 of the '132 patent is exemplary:

8. A computer readable medium having program code recorded thereon, for execution on a computer having a graphical user interface and a user input device, to place a trade order for a commodity on an electronic exchange having an inside market with a highest bid price and a lowest ask price, comprising:

a first program code for setting a preset parameter for the trade order;

a second program code displaying market depth of a commodity, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including the bid and ask quantities of the commodity, aligned with a static display of prices corresponding thereto, wherein the static display of prices does not move in response to a change in the inside market;

a third program code for displaying an order entry region comprising a plurality of areas for receiving commands from the user input device to send trade orders, aligned with the static display of prices, each area corresponding to a price of the static display of prices; and

a fourth program code for receiving a command as a result of a selection of a particular area in the order entry region by a single action of the user input device with a pointer of the user input device positioned over the particular area, to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.

Joint App. Ex. 1 at Col. 12, l. 57 to Col. 13, l. 17.

Claim 8 is directed to an article of manufacture – a product. While the Federal Circuit has approved product claims that describe a product by what the parts of the claimed product do – *i.e.*, functional claiming –; *see e.g. Typhoon Touch v. Dell Corp.*, 659 F.3d 1376 (Fed. Cir.

2011), the U.S. Supreme Court has consistently held such claims are invalid. *Halliburton Oil Well Cementing v. Walker*, 329 U.S. 1, 8 (1948) (which rejected claims that "do not describe the invention but use `conveniently functional language at the exact point of novelty.'"); *General Electric Co. v. Wabash*, 304 U.S. 364 (1938); and *O'Reilly v. Morse*, 56 U.S. (15 How.) 62 (1854). Indeed, to limit the prohibition on functional claiming set forth in the *Halliburton* case, Congress added what is now codified as the sixth (6th) paragraph of section 112 to the patent statute. *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 27 - 28 (1997) (citing *In re Donaldson Co.*, 16 F. 3d 1189, 1194 (Fed. Cir. 1994)). This provision provided that a patent applicant could obtain a valid product claim using functional language - *i.e.*, "a means for . . ." – provided the functional language was understood to encompass only those structures described in the corresponding patent application as performing the recited function. *In re Donaldson Co.*, 16 F. 3d 1189, 1194 (Fed. Cir. 1994).

Defendant GL Trade raised this issue previously during the *eSpeed* suit, arguing that claim 8 of the '132 Patent should be construed as a "means-plus-function" claim under ¶ 6 of 35 U.S.C. §112, on the ground that the term "program code," as used in the claim language, does not provide sufficient structure through which to perform the functions following that language. *See Soderstrom Decl.*, Ex. 1 at pp. 19-25. Judge Moran, relying on the case law as it existed as of October 2006, concluded in his October 31, 2006 *Markman* order that the term "program code" did provide sufficient structure. *See id.* at 22 -24.

Case law subsequent to Judge Moran's Order, however, supports Defendants' position that the "program code" limitations are means-plus-function limitation. Recent case law has also clarified that generic terms used in the context of computer technology, such as "computer" and "software," do not themselves provide sufficient structure.

In a ruling last year, the District Court for the Northern District of California in the *Soque Holdings* case held that despite the lack of traditional “means” language, two claim terms reciting a “computer displaying ..., a plurality of user-selectable options...” were means-plus-function claims. *Soque Holdings (Bermuda) Ltd. v. Keyscan, Inc.*, No. C 09-2651, 2010 WL 2292316, at *11 (N.D. Cal. June 7, 2010). The Court concluded that the traditional “means for” language had merely been replaced by the word “computer,” and that specifying a “computer,” without more, does not sufficiently describe the structure that constitutes the “means” for “displaying ...a plurality of user-selected options.” *Id.*

More particularly, the defendants in *Soque Holdings* urged that “the term ‘computer displaying’ does not provide a definite structure, but rather refers to a generic computer and describes the computer purely by its function.” *Id.* at *12. The Court ruled that “reference to a ‘computer’ provides no basis to distinguish the structure from any other general purpose computer; thus, **‘computer’ does not adequately describe a specific structure.**” *Id.*, at *12 (citing *Aristocrat Tech. Austl. Pty Ltd. v. Internat’l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir.), *cert. denied*, 129 S. Ct. 754 (2008))(emphasis added).

The Court pointed out that the word “computer” does not describe “how” it communicates or “how” it determines what to display. *Id.* at *11. The Court further stated that “if ‘computer’ is insufficient structure for a ‘means’ limitation, **the naked term ‘computer’ cannot describe sufficient structure when recited directly in the claim limitation. An algorithm of some nature-that discloses how the plurality of user-selectable options is generated-is necessary to save this claim . . .**” *Id.* (internal citation omitted) (emphasis added).

In *Aristocrat Tech. Austl. Pty Ltd.*, cited by the *Soque* court, the Federal Circuit stated:

For a patentee to claim a means for performing a particular function and then to disclose only a general purpose computer as the structure designed to perform that

function amounts to pure functional claiming. Because general purpose computers can be programmed to perform very different tasks in very different ways, **simply disclosing a computer as the structure designated to perform a particular function does not limit the scope of the claim to ‘the corresponding structure, material, or acts’ that perform the function, as required by section 112 paragraph 6.**

Aristocrat, 521 F.3d at 1333 (emphasis added).

In *Finisar Corp. v. DirectTV Group, Inc.*, also cited by the *Soque Holding* court, the Federal Circuit made this same point in the context of computer software. *Finisar Corp. v. DirectTV Group, Inc.*, 523 F.3d 1323, 1341 (Fed. Cir.), *cert. denied*, 129 S. Ct. 754 (2008). In the Federal Circuit’s words, in the means-plus-function context, “[s]imply reciting ‘software’ without providing some detail about the means to accomplish the function is not enough.” *See id.*; *see also Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1385 (Fed. Cir. 2009) (“Blackboard’s argument also parallels the argument that was rejected in *Net MoneyIN*, i.e., that the recitation of structure was sufficient because a person skilled in the art would know how to program a bank computer to generate ‘authorization indicia.’ . . . A patentee cannot avoid providing specificity as to structure simply because someone of ordinary skill in the art would be able to devise a means to perform the claimed function.”) (citing *Net MoneyIN v. VeriSign, Inc.*, 545 F.3d 1359, 1367 (Fed. Cir. 2008); *Kozam v. Phase Forward, Inc.*, 2005 WL 6218037 (D. Md. Aug. 29, 2011) (finding that “data verification from module” is well known as a software component, but conveyed no structural meaning and therefore should be treated as a means-plus-function limitation).

Under this case law, all decided since Judge Moran’s 2006 opinion, merely reciting general computer-related terms like “software,” or “computer,” or, more particularly, “program code,” does not provide sufficient structure without a clear disclosure of additional detail about the algorithm or code required to meet the functional limitation. In the instant case, the claim

language in claim 8 (and the other claims including “program code”) merely replaces terms like “computer displaying” from the *Soque Holding* claims with “program code displaying” (and other similar constructs). Nowhere in the claims or specification is the structure for this program code delineated or described in any but the most general terms. This recent case law strongly supports the construction of the claims reciting “program code” in the ’132 and ’304 patents as a means-plus-function claims subject to the requirements of ¶ 6 of 35 U.S.C. §112.

2. No Sufficient Structure Is Recited, Therefore the “*program code*” Claims Are Indefinite

For means-plus-function claims, the specification must identify and clearly link a structure to the recited claim function, and the structure must be sufficient to perform the recited claim function. *B. Braun Med. Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997). In a means-plus-function claim “in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.” *WMS Gaming, Inc. v. International Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999).

To avoid pure functional claiming, the applicant must disclose a particular algorithm that performs the claimed function. *Id.* Thus, the corresponding structure for a computer-implemented means-plus-function term is “the algorithm disclosed in the specification.” *WMS Gaming*, 184 F.3d at 1349. Recently, the Federal Circuit described the disclosure of structure required for means-plus-function limitations reciting program code:

For means-plus-function limitations where the disclosed structure is a computer programmed to implement an algorithm, the patent must disclose enough of an algorithm to provide the necessary structure under 35 U.S.C. § 112 ¶ 6. The patentee may express this algorithm in any understandable manner, including as a flowchart, so long as sufficient structure is disclosed.

In re Aoyama, 656 F.3d 1293, 1297-98 (Fed. Cir. 2011) (citations omitted) (finding means-plus-function claim indefinite because the patent “fails to describe, even at a high level, how a computer could be programmed to produce the structure that provides the results described in the [flowchart]”). Absent any such algorithm, the claim lacks sufficient disclosure of structure under 35 U.S.C. § 112 ¶ 6 and is therefore indefinite under 35 U.S.C. § 112 ¶ 2. *Id.*

“The inquiry is whether one of skill in the art would understand the specification itself to disclose a structure, not simply whether that person would be capable of implementing that structure.” *Id.* Accordingly, “[i]t is not enough for the patentee simply to state or later argue that persons of ordinary skill in the art would know what structures to use to accomplish the claimed function.” *Id.* “To allow that form of claiming under section 112, paragraph 6, would allow the patentee to claim all possible means of achieving a function.” *Id.* Accordingly, “[t]hat ordinarily skilled artisans could carry out the recited function in a variety of ways is precisely why claims written in ‘means-plus-function’ form must disclose the particular structure that is used to perform the recited function.” *Id.*

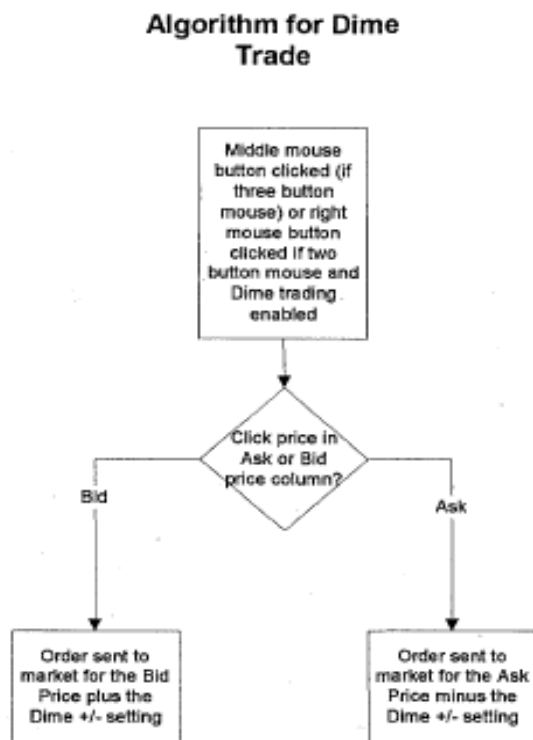
In the patents-in-suit, there is no disclosure of any algorithm or structure for any of the “program code” claims. The only “logic” set forth is the flow chart in Figure 6, but that flow chart does not identify any algorithm or code for carrying out any of steps set forth in that flow chart. Nor does the specification identify any such algorithms for any of the program code functions. For example, claim 8 requires:

a second program code displaying market depth of a commodity, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including the bid and ask quantities of the commodity, aligned with a static display of prices corresponding thereto, wherein the static display of prices does not move in response to a change in the inside market;

Joint App. Ex. 1 at Col. 12, l. 65 to Col. 13, l. 5. Nothing in the patents or intrinsic record sets forth any algorithm or structure for implementing the code displaying market depth of a

commodity. The Provisional includes certain flowcharts entitled “Flowchart for Algorithm,” such as the one depicted below:

Flowchart of Dime Trade Algorithm



Joint App. Ex. 3 at JA 000040. However, none of these flowcharts describe an algorithm for the alleged inventions nor include a sufficient structure for any of the program code limitations. None even purports to provide an algorithm or software code for “displaying market depth of a commodity.” Likewise, there is no structure set forth in the specification for this function or any or the others. As a result, each of the program code terms is invalid as indefinite.

3. TT’s Position is Inconsistent with The Case Law

For all the reasons previously noted, TT’s position that “program code” is not a means-plus-function claim and that it is not indefinite is inconsistent with the uniform case law that has been created since the time of Judge Moran’s ruling in the *eSpeed* case.

VI. CONCLUSION

For the foregoing reasons Defendants respectfully requests that the Court adopt their proposed construction of the terms in dispute.

Dated: December 20, 2011

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I hereby certify that on December 20, 2011, I electronically filed this **DEFENDANTS' OPENING MARKMAN BRIEF** with the Clerk of the Court using the CM/ECF system which will send notification of such filing to the following persons at the given email addresses, and/or have emailed a true and correct copy to:

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